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STANDING COMMITTEE ON DEFENCE

(2015-2016)

(SIXTEENTH LOK SABHA)

MINISTRY OF DEFENCE

DEMANDS FOR GRANTS (2016-17)

MINISTRY OF DEFENCE (MISCELLANEOUS)

(DEMAND NO. 20)

TWENTY-FIRST REPORT

LOK SABHA SECRETARIAT

NEW DELHI

May, 2016/ Vaisakha, 1938 (Saka)

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(DEMAND NO. 20)

Presented to Lok Sabha on 03.05.2016

Laid in Rajya Sabha on 03.05.2016

LOK SABHA SECRETARIAT

NEW DELHI

May, 2016/ Vaisakha, 1938 (Saka)

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COMPOSITION OF THE STANDING COMMITTEE ON DEFENCE (2015-16)

Maj Gen B C Khanduri, AVSM (Retd) - Chairperson

Members

Lok Sabha

2. Shri Suresh C. Angadi
3. Shri Shrirang Appa Barne
4. Shri Dharambir
5. Shri Thupstan Chhewang
6. Col Sonaram Choudhary(Retd)
7. Shri H.D. Devegowda
8. Shri Sher Singh Ghubaya
9. Shri G. Hari
10. Shri Ramesh Jigajinagi
11. Dr. Murli Manohar Joshi
12. Km. Shobha Karandlaje
13. Shri Vinod Khanna
14. Dr. Mriganka Mahato
15. Shri Tapas Paul
16. Shri Ch. Malla Reddy
17. Shri Rajeev Satav
18. Smt. Mala Rajya Lakshmi Shah
19. Capt Amarinder Singh(Retd)
20. Shri A.P. Jithender Reddy
21. Smt. Pratyusha Rajeshwari Singh

Rajya Sabha

22. Shri K. R. Arjunan
23. *****Shri Anand Sharma
24. Shri Rajeev Chandrasekhar
25. Shri A.U. Singh Deo
26. Shri Harivansh
27. Shri Vinay Katiyar
28. Shri Hishey Lachungpa
29. Shri Madhusudan Mistry
30. Smt. Ambika Soni
31. Shri Tarun Vijay

*** Shri Anand Sharma resigned *vide* Notification No. RS 10/2016 - T dt. 07.03.2016.**

SECRETARIAT

1.	Smt. Kalpana Sharma	-	Joint Secretary
2.	Shri T.G. Chandrasekhar	-	Director
3.	Smt. Jyochanmayi Sinha	-	Additional Director
4.	Shri Rahul Singh	-	Under Secretary
5.	Smt. Preeti Negi	-	Executive Assistant
6.	Shri Harish Chandra	-	Executive Assistant

INTRODUCTION

I, the Chairperson of the Standing Committee on Defence (2015-16), having been authorised by the Committee to submit the report on their behalf, present this Twenty-first Report on 'Demands for Grants of the Ministry of Defence for the year 2016-17 on Ministry of Defence(Miscellaneous, Demand No. 20)'.

2. The Demands for Grants of the Ministry of Defence were laid on 16 March 2016 in Lok Sabha. The Committee took evidence of the representatives of the Ministry of Defence on 4, 5 & 6 April 2016. The draft Report was considered and adopted by the Committee at their Sitting held on 29 April 2016.

3. The Committee wish to express their thanks to the officers of the Ministry of Defence and representatives of the three Services for appearing before the Committee and furnishing the material and information which the Committee desired in connection with examination of the Demands for Grants.

4. For facility of reference and convenience, Observations/Recommendations of the Committee have been printed in bold letters in Part II of the Report.

New Delhi;
29 April, 2016
09 Vaisakha, 1938 (Saka)

Maj Gen B C Khanduri, AVSM (Retd),
Chairperson,
Standing Committee on Defence

REPORT
PART-I
CHAPTER -I

ORDNANCE FACTORY BOARD

Ordnance Factories are an integrated base for indigenous production of Defence equipment and ammunition and form the backbone of the country's Defence production. Defence production is a highly specialized sector, full of complexities and challenges, where products have to be safe, reliable, consistent and capable of operating under varying terrains as well as climates and in extreme conditions. Accordingly, the technologies applied, which cover a wide spectrum of engineering, metallurgy, chemical, textile, leather, optical technologies etc. have to ensure high quality and productivity, apart from meeting the primary objective of self-reliance. Ordnance Factories also fulfill certain requirements of Paramilitary and Police Forces for arms, ammunition, clothing and equipment. Ordnance Factories endeavour to enhance their capacity utilization not only by securing orders from the Defence forces but also through sustained efforts in diversification to non-defence customers and exports. However, priority of the Ordnance Factories is indigenous production of Defence products only.

1.2 They produce a wide range of arms and ammunitions for the Infantry, Armoured Corps, Artillery, Air Defence Artillery and Engineer Corps of the Army. Ordnance Factories produce ammunition for Navy and Air Force and have taken up indigenous development of Naval armaments. The factories produce military transport vehicles, infantry combat vehicles, armoured vehicles, optical and opto-electronic instruments, summer and winter uniforms, parachutes, miscellaneous leather goods and general stores. To summaries the role of Ordnance Factory Board include to provide a dedicated manufacturing base for military hardware, indigenization and TOT absorption, maintenance of `War Reserve' capacity and `Life Cycle' support to arms and ammunition supplied etc.

1.3 The allocations provided at BE, RE during the year 2015-16 and at BE 2016-17 is as under:

SALIENT FEATURE OF OFB BUDGET	BE	RE	Actual Provisional	BE
	2015-16	2015-16	2015-16	2016-17
- Revenue Expenditure Account				
1. Income/Revenue from Supplies to Defence and Non Defence	11265.90	13552.40	13077.00	15764.96
2. Other Income/Receipts	130.60	146.81	187.00	150.11
3. Transfer from RR Fund	425.00	425.00	342.00	450.00
A. Total Income/Receipts	11821.50	14124.21	13606.00	16365.07
4. Expenditure on Salary	5691.14	5688.15	5370.00	6656.13
5. Expenditure on Material, Electricity and other Misc Admin Expenses	8164.59	8838.54	8133.41	10026.55
6. Renewal & Replacement	425.00	425.00	342.00	450.00
7. Transfer to RR Fund	425.00	425.00	425.00	450.00
B. Total Revenue Expenditure	14705.73	15376.69	14270.41	17582.68
8. Net Revenue (X) (Deficit(-)/Surplus(+) (A - B)	-2884.23	-1252.48	-664.41	-1217.61
- Capital Expenditure Account				
1. New Civil Works towards creation of new facilities at OFKR, OFN and other Factories	296.00	245.05	341.00	229.67
2. New Plant and Machinery towards Modernisation	424.68	234.00	304.00	490.00
3. Stockpile of Material	39.39	21.00	39.00	16.01
4. Total Capital Budget (Y)	760.07	500.05	684.00	735.68
NET REVENUE and CAPITAL	**3644.30**	**1752.53**	**1348.41**	**1953.29**

1.4 The Capital Expenditure and Revenue Expenditure of Ordnance Factories from the year 2010-11 to 2015-16 is as under:

Indian Ordnance Factories

BUDGET UTILISATION (Rupees in Crore)

YEAR	CAPITAL EXPENDITURE			REVENUE EXPENDITURE		
	BE	RE	ACTUAL	BE	RE	ACTUAL
2010-11	769	456	454	11875	11704	10903
2011-12	400	300	278	11640	12470	12141
2012-13	400	400	349	13015	12114	11936
2013-14	436	466	465	13856	13124	12834
2014-15	1207	660	746	14317	14237	12832
2015-16	760	500	684 (Provisional)	14706	15376	14270 (Provisional)

OFB 14

1.5 The Ordnance Factories Organization is a blend of old and state-of-the-art factories, with the first Ordnance Factory established in 1801 at Cossipore, near Kolkata, and two new ordnance factories are coming up at Nalanda in Bihar and Korwa in UP. At present Ordnance Factories manage 41 manufacturing units and 32 other establishments. Ordnance Factories have been continuously upgrading their infrastructure, with induction of state-of-art technologies to meet futuristic requirements of users.

`41 Ordnance Factories are divided into 5 operating divisions, based on the main products/technologies employed:

i) Ammunition & Explosives – 11 Factories.
ii) Weapons vehicles & Equipments - 11 Factories.
iii) Armoured vehicles – 6 Factories.
iv) Ordnance equipment - 5 Factories.
v) Materials & components – 8 Factories.'

Delays in Projects

1.6 The Committee have always been concerned about delay in projects. In this regard, the Ministry was asked to give details of the delayed projects, their status till date, and the projects running behind the schedule. The Ministry supplied the information as under:-

'The current status of the various projects undertaken by OFB is as under:

Project	Annual Capacity		Expended till Jan'16 (in Rs. Crore)	Likely month of completion
	Existing	Proposed		
T-72 Variants Sanction month – Aug 2010 Sanctioned cost – Rs. 279.63 crore Original completion month – March 2013 (Import Substitute)	0	50 nos.	169.07	Mar' 2017
750 AV Engines Sanction month – Aug 2010 Sanctioned cost – Rs. 350.56 crore Original completion month – March 2013 (Import Substitute)	353 nos.	750 nos.	72.51	Jun'18
Spares for T-72 & T-90 Tanks Sanction month– Oct 2010 Sanctioned cost – Rs. 367.52 crore Original completion month – Dec 2013 (Import Substitute)	T72-72 sets T90- nil	T72- 120 sets T90-50 sets	198.61	Dec' 2016
T-90 Tanks (100 to 140 nos per annum) Sanction month – Sep 2011 Sanctioned cost – Rs. 971.36 crore Original completion month – March 2014	100 nos.	140 nos.	105.99	Dec' 2018

Akash Booster & Sustainer Sanction month – Dec 2011 Sanctioned cost – Rs. 105.78 crore Original completion month – March 2014 (Capacity Augmentation)	150 nos.	500 nos.	38.5	Dec' 2018
Large Caliber Weapons Sanction month – Mar 2012 Sanctioned cost – Rs. 376.55 crore Original completion month – March 2015 (Capacity Augmentation)	300 Nos.	500 Nos.	94.57	Dec 2016
HMX Plant Sanction month – Mar 2012 Sanctioned cost – Rs. 59.96 crore Original completion month – Feb 2016 (Import substitute)	nil	45 MT/Annm	40.41	Dec'16
PINAKA @ 5000 Sanction month - Apr 2013 Sanctioned cost –Rs. 1262.55 Original completion month – Oct 2015 (Capacity Augmentation)	1000 nos.	5000 Nos.	**189.85**	Dec'17
Ordnance Factory Nalanda (Propellant) Sanction month- 05.02.09 Sanctioned cost – Rs. 2160.00 (Capacity Creation)	nil	8 Lakhs BMCS	662.02	Mar'19
Ordnance Factory Korwa (Small Arms) Sanction month – Oct 2007 Sanctioned cost – Rs. 408.01 crore (Capacity Creation)	nil	45000 Nos.	168.85	Mar 2017
Ammonium Percolate Sanction month –29.11.10 Sanctioned cost – Rs. 26.48 crore	Nil	220MT /Annm	0.00	Aug'17
MPV Sanction month –06.09.10 Sanctioned cost – Rs. 21.06 crore	Nil	300 Nos	18.65	Mar'16
125 mm FSAPDS Sanction month –09.01.15 Sanctioned cost – Rs. 484.41crore			83.33	

1.7 During deliberations with the representatives of Army and Ministry of Defence , the Committee are informed that there is large scale deficiencies in various type of equipments and vehicles. These deficiencies are due to inadequate production capacities of Ordnance Factories Board. Therefore, there is a need to ramp of the capacity of Ordnance Factories Board and diversify the sources of ammunition.

1.8 On being asked about the reasons for delays of projects, the Ministry in its written reply has identified the following individual and / or collective reasons for delays:

`The major reasons for delay during the scheduled period were due to (a) procurement of plant & Machinery (b) Delay in completion of civil works by MES.

(a) Procurement of P&M is a long lead time process. Problems were encountered at different stages as under :

- **<u>Tendering Stage:</u>**

i) Limited vendor base since majority of our machine requirement are for customized SPMs/tooled up machine, as very few offers are received and to have competition the Tender Opening Date (TOD) was extended.

ii) Non availability of technology like, Forging Plant, Chemical Plants, Metallurgical Plants indigenously. In such cases Global participation is required.

iii) Explosive plants have very limited Global sources.

iv) Retendering of number of cases to avoid RST situation.

v) Because of financial crisis in Europe during this period, some of the European suppliers failed to respond to our TE leading to retendering the cases.

vi) The P&M Procurement Manual during that period had no provision for advance payment. Hence many suppliers of such machines which were cost intensive did not participate in TE.

- **Supply stage:**

vii) Being customized SPMs/tooled up machines, delay occurred on the part of P&M supplier in design, manufacture & supply of the m/c.

viii) M/s HMT is a major supplier of machine tools to OFs. Because of financial crisis, HMT has not been able to supply all machine to OFB within stipulated delivery schedule.

ix) Because of financial crisis, during this period some of the suppliers in Europe failed to execute the supply timely.

Because of above reasons, the actual execution could not be completed within schedule.

(b) OFs are mostly depending on MES for all major civil works envisaged under various projects.'

(Ref. Page 12 and 13)

Modernisation

1.9 Modernization of infrastructure is a continuous process in Ordnance Factories with a view to update the plants and machineries matching both qualitative and quantitative requirement of the products projected in the perspective plan.

1.10 The Committee enquired about the details of the outlay provided and spent by all Ordnance Factories alongwith complete details of each project/programme proposed, planned and implemented during the last five years on modernization, the Ministry of Defence stated as under**:**

1.11 During last five years (2010-2014), total outlay (Budget Estimate/BE) provided and the actual expenditure were Rs. 2348.45 crore and Rs. 2226.31 crore respectively; details are given below:

(Rupees in Crores)

Expenditure Head	Financial Year	Capital Outlay provided	Actual Expenditure
M&E	2010-11	316.63	327.24
	2011-12	169.99	162.83
	2012-13	107.02	102.45
	2013-14	251.27	251.27
	2014-15	381.96	377.92
	Sub Total	**593.64**	**592.52**
Works	2010-11	167.81	167.63
	2011-12	272.00	267.11
	2012-13	270.00	265.13
	2013-14	221.82	219.94
	2014-15	314.96	300.66
	Sub Total	**709.81**	**699.87**
RR	2010-11	220.00	207.82
	2011-12	325.00	310.25
	2012-13	500.00	415.85
	2013-14	699.36	697.01
	2014-15	620.00	562.57
	Sub Total	**1045.00**	**933.92**
Total		**2348.45**	**2226.31**

Expenditure on Research and Development

1.12 The Committee enquired about the in-house Research and Development conducted in Ordnance Factories for development of new products and the percentage of expenditure in Research and Development to the overall allocations during each of the last five years, the Ministry in its written reply submitted:

> `Research & Development at OFB aims towards development of products / processes improvements, upgrades of existing products/processes by absorption of ToT, collaboration with Indian partners/ foreign partners, re-engineering and innovation, etc. to meet implicit/explicit demands of service and civil market. It also includes joint working on some of the large projects with DRDO from the inception stage and to render manufacturing assistance wherever required by DRDO.
>
> Percentage of expenditure in Research & Development to the overall allocations during each of the last five years is as follows:

Year	VOI (Rs. crore)	R & D Expenditure (Rs.crore)	% of VOI spent on R&D
2010-11	11,215	39.95	0.356 %
2011-12	12,391	36.00	0.290 %
2012-13	11,975	48.00	0.400 %
2013-14	11,123.33	42.70	0.384 %
2014-15	11,343.62	55.82	0.492 %
2015-16 **(Projected)**	13,500.00	89.00	0.660%

1.13 On the issue of new products/projects being formulated, launched and outsourcing of Research and Development work done by OFB, the Ministry in its written reply has stated: The list of new products developed/ being developed is as under:

New products already developed	Products being developed
i) Mine Protected Vehicle ii) Under Barrel Grenade Launcher iii) Multi Grenade Launcher iv) KAVACH MOD-II v) Naval Gun CRN-91 vi) Aerial Bombs &Rockets:- 100-120 Kg Aerial Bomb for fighter jets, 250/ 450 Kg RDZ Aerial Bombs and 140 mm rocket vii) Driver's Night Sight for BMP-II, T-72 and T-90 tanks viii) Commander's Thermal Imager Based Night Sight ix) 0.22 Revolver, 0.32 Revolver and 0.32 Pistol	i. 155mm x 45 Caliber Gun with Electronic Modules (Dhanush) ii. 105mm Vehicle Mounted Gun System iii. Up-Gunning the 130mm Gun to 155 x 45 Cal iv. Mounted Gun System 155mm x 52 Cal (Truck Mounted) v. Upgrade of air defence gun L-70 vi. Electronic Fuzes vii. Futuristic Infantry Combat Vehicle (FICV)

Research and Development activities in the frontier technological sub assemblies are out sourced to Indian Institutes of Technology and NITs.'

1.14 When the Committee asked about the OFB's projection for Twelfth Plan in respect of Research and Development, the Ministry, in its written note, has stated as below:

> `Against allocation of Rs. 370.79 Crorefor 12th plan, OFB has undertaken In-house R&D projects of Rs. 416.79 Crore for development of the products indigenously which are at various stages.'

1.15 The Ministry was asked to furnish details about the original research & development done by each of the OFs and research & development carried out under licensed production, under Transfer of Technology (ToT) during the last five years, the Ministry replied as under:

> `Private sector has participated in the Research & Development programmes of OFB by making supplies of indigenously manufactured hardware items where needed.
>
> **Items through In-house Research & Development during last 5 years:**
>
> i) Mine Protected Vehicle by Ordnance Factory Medak
> ii) Under Barrel Grenade Launcher by Ordnance Factory Trichy
> iii) Multi Grenade Launcher by Ordnance Factory Trichy
> iv) KAVACH MOD-II by Machine Tool Prototype Factory Ambernath, Gun Carriage Factory Jabalpur and Ammunition Factory Kirkee.
> v) Naval Gun CRN-91 by Ordnance Factory Medak.
> vi) Aerial Bombs: 100-120 Kg Aerial Bomb for fighter jets, 250/ 450 Kg RDZ Aerial Bombs by Ordnance Factory Khamaria.

Development of Items under licensed production during last 5 years:

i) Bi Modular Charge System for 155 mm Gun at Ordnance Factory Nalanda which was commenced with ToT from M/s Denel but after its being blacklisted, support of HEMRL, DRDO was taken to successfully develop the item from the obtained ToT documentation.

II) Pinaka Rocket at Ordnance Factory Chanda under ToT from DRDO.'

1.16 On providing the details on the contribution of services towards the Research & Development of high Technology Military Projects, in terms of budget and providing inputs for their operational requirement, the Ministry stated as under:

`Budget for Research & Development is provided by Ministry of Defence only. Therefore, DDP may like to comment on the same.

Contribution of services i.e. Services Headquarters (AHQ, Air HQ and NHQ) towards Research & Development programs of OFB is in the following areas:

i) Formulating the Quality Requirements after consultation with all stake holders OFB, DRDO, Users, DGQA / DGAQA/ DGNAI.
ii) Periodic review of the ongoing research & development projects.
iii) Formulating the user's trial methodology and implementation including the provision of proof stock components.
iv) Allocation of expert soldiers in the operation of the weapon/ ammunition for the trial and allocation of trial unit resources for conduct of the trial.
v) Assessment of trial results and freezing the final Qualitative Requirements.

Services have extended above contribution to OFB for the development of following items:

i) Mine Protected Vehicle
ii) Under Barrel Grenade Launcher
iii) Multi Grenade Launcher
iv) KAVACH MOD-II
v) Naval Gun CRN-91
vi) Aerial Bombs &Rockets:-100-120 Kg Aerial Bomb for fighter jets, 250/ 450 Kg RDZ Aerial Bombs.
vii) Driver's Night Sight for BMP-II, T-72 and T-90 tanks
viii) Commander's Thermal Imager Based Night Sight
ix) 0.22 Revolver, 0.32 Revolver and 0.32 Pistol
x) Pinaka Rocket
xi) Bi Modular Charge System (BMCS) for 155 mm Gun system
xii) 5.56mm INSAS & its ammunition
xiii) 51mm mortar & its ammunition
xiv) MBT Arjun Mark-I and its ammunition
xv) Armoured Ambulance
xvi) Armoured NBC Recee Vehicle.

There is a structured mechanism in the form of Armament Development Monitoring Committee to discuss on all matters related to development stores in the area of Armament & Ammunition which have been undertaken by DRDO. The objective is to improve interaction and create synergy between the production agencies and DRDO labs together with the Services. The Services provides the necessary inputs on the weapon system and Ammunition to be developed while the requisite budget support is provided by the government.'

Indigenization of defence products

1.17 On the effective steps taken by Ministry to quantify the level of indigenization in defence equipment in Ordnance Factories, the Ministry stated as under:

> `Indigenization of Defence stores is a major thrust area of OFB and is carried out either through ToT from foreign OEMs/DRDO or through in-house R&D.
>
> The steps taken to enhance the indigenization levelin OFB products are furnished as under:
>
> - To progress indigenization and TOT absorption in a time bound manner, dedicated task forces have been constituted in factories and progress is being reviewed regularly at the highest level of OFB.
>
> - Interactive workshop cum exhibition to display all the imported items at one place with detailed specifications was organized at Heavy vehicle Factory, Avadi, Chennai and the same is planned to be repeated as well as replicated at other units also.
>
> OFB has also undertaken several projects for design & development through In-house R&D as well as in association with DRDO with a primary objective of import substitution.'

1.18 The value of indigenization vis-a-vis value of supplies for the last three years is as under:

Year	Value of supply	Value of Indigenous content	% of Indigenous content
2012-13	11,975	10,513	87.79 %
2013-14	11,123	9,438	84.85%
2014-15	11,364	10,347	91.1%

Quality Check in Ordnance Factories

1.19 When asked whether any quality check is conducted for the products developed by OFs, the Ministry in its reply stated as under:

> `OFB supplies ammunition to Indian Army duly inspected by Quality Control department of factory as well as DGQA (2nd Party Inspection Agency). Following tests are carried for a batch of ammunition production to ensure quality:
>
> - All input material are tested in designated laboratories

- 100% dimensional checking is done by factory
- Sampling dimensional checking is done by DGQA
- On an average 21 lab tests are conducted by Factory and DGQA
- On an average 4% rounds are fired by DGQA as part of dynamic firing

The ammunition batch is accepted and issued to Army only after it passes all the above tests. However, in spite of maintaining stringent checks of quality, during bulk exploitation of above ammunition by user some time some defects/accidents are observed. Important reasons for the defect in performance of ammunition are:

- Manufacturing deficiencies
- Improper handling and Storage in ammunition depots
- Improper maintenance of weapon system
- Improper handling of ammunition and weapon during firing

OFB is responsible for manufacturing and up to dispatch of ammunition and is not aware of the storage/ handling/ maintenance conditions at Army's end that are equally responsible for defects/accidents.

Unlike other products, ammunition is single-use item. For this reason, 100% inspection including dynamic proof cannot be carried out. A principle of Statistical Quality Control (SQC) is employed for final acceptance of ammunition. SQC is inherently associated with both Producer's risk and Customer's risk. Hence such problems may surface during the process of exploitation. System of accelerated exploitation of ammunition has been introduced for last two years, to have early feedback on performance of Ammunition. As per reports received fromUser on accelerated exploitation, the performances of the ammunitions have been found to be satisfactory.'

Shortage of Manpower

1.20 As regard to the authorized and existing strength of all Ordnance Factories both technical and non-technical, for the last five years, the Ministry in a written note furnished to the Committee stated as under:

'The Technical posts in the Ordnance Factories Organization are that of Industrial Employees, Junior Works Manager (Tech), Chargeman (Tech) and Para Medical Staff. The sanctioned versus existing strength in these categories is mentioned in the table below:

TECHNICAL						
YEAR	**Sanctioned Strength**	**Existing Strength**				
		Apr-12	**Apr-13**	**Apr-14**	**Apr-15**	**Jan-16**
Industrial Empolyee	118736	63572	63902	62350	60758	57879
Chargeman (Technical)	10320	7083	7186	7249	7166	7262
Junior Works Manager (T)	6911	5505	5561	5424	4815	5139
Para-Medical	1507	1354	1311	1250	1278	1296
TOTAL (TECH)	**137474**	**77514**	**77960**	**76273**	**74017**	**71576**

The Non- technical posts in the Ordnance Factories Organization are that of Non-Industrial Employees, Junior Works Manager (Non-Tech and Chargeman (Non-Tech) . The sanctioned versus existing strength in these categories is mentioned in the table below:

NON-TECHNICAL						
YEAR	**Sanctioned Strength**	**Existing Strength**				
		Apr-12	**Apr-13**	**Apr-14**	**Apr-15**	**Jan-16**
Non Industrial Employee	19946	16034	15442	15161	14647	14402
Chargeman (Non-Technical)	1765	1717	1644	1633	1606	1551
HQ Division (Sr PA & PS)	1006	652	607	556	527	496
Junior Works Manager (NT)	783	711	727	696	629	664
TOTAL (NT)	**23500**	**19114**	**18420**	**18046**	**17409**	**17113**

Grp A	**Sanctioned**	**Existing**
IOFS	1718	1495
IOFHS	283	208
Hindi Officer	39	22
Matron	45	45
Principle Gr I&II	23	12
Staff Officer	14	14
PPS	1	1
Total	2123	1797

Re-structuring of Ordnance Factories

1.21 On being asked by the Committee regarding re-structuring of Ordnance Factories and whether budget for re-structuring is being provided for Ministry of Defence or it is arranged from internal resources, the Ministry has stated as under:

> 'There are no known plans for restructuring of Ordnance Factories. Hence, no budgetary provisions have been planned for the same.'

CHAPTER - II

DEFENCE RESEARCH AND DEVELOPMENT ORGANISATION

Defence Research & Development Organization has come a long way since its modest beginning in 1958. Starting with only 10 laboratories, DRDO has grown multi-dimensionally and has evolved to be a core research organization with a vast network of 52 laboratories and establishments spread across the country. With a vision to empower India with cutting-edge technologies and equip our Services with internationally competitive systems, DRDO has proven its competence to produce state-of-the-art strategic and tactical military hardware and related technologies in diverse disciplines such as Aeronautics, Armaments, Combat Vehicles, Combat Engineering, Electronics, Missiles, Life Sciences, Materials and Naval Systems. At the core of this technological strength of DRDO is its expertise in system design, system integration, testing and evaluation and project management built over the last five decades, which has enabled it in developing indigenous capabilities in weapons and their delivery systems.

2.2 DRDO plays significant roles to provide scientific and technological advice on aspects of weapons, platforms surveillance to the Ministry of Defence in support of Defence policy; as evaluator of Defence equipment for the military operational requirements and generating new technological knowledge to be transferred for development of state-of-the-art weapon systems by the Defence industries; to carry out research and cutting edge technology development for building a strong indigenous technology base; to design, develop and lead to production state-of-the-art sensors, weapons systems, platforms and allied equipments for our Defence Services; to support National Cyber Security Architecture –testing capabilities, security solutions, testing hardware, indigenous NW systems, Defence tools, support operations. The Organization also advises the Government to make technical assessments of international security threats and the military capabilities of both current and potential adversaries.

Budgetary provisions

2.3 Budget Estimates (Projection and Allocation) and Revised Estimates (RE) (allocation) of Defence Research and Development for the last five years and Budget Estimate for the year 2016-17 are given in the following table: (Rs. in crores)

Year	Budget Estimate **Projection**	Budget Estimate **Allocation**	Revised Estimate	Actual Expenditure From presentation (Rs In Cr.)
2012-13	14463.66	10635.56	9884.94	9,794.80
2013-14	16483.28	10610.17	10934.17	10869.88
2014-15	18459.46	15282.92	113716.14	#13257.98
2015-16(RE)	19641.56	14358.49	12491.21	*11603.11
2016-17(BE)	18782.86	13593.78		

 # Exp. Is less due to higher receipts.
***Exp. As per CGDA up to 16 Mar 2016.**

Share of R&D vs Defence Expenditure

2.4 In connection with the examination of Demands for Grants (2016-17), the Committee were supplied the following information in regard to the expenditure made for R&D activities:—

(Rs. in crores)

Year	**Defence Expenditure**	**R&D Expenditure**	**%age of Defence Expenditure**
2011-12	1,70,913.00	9,893.84	5.79
2012-13	1,81,776.00	9,794.80	5.39
2013-14	2,03499.35	10,868.88	5.34
2014-15	2,22370.00	13257.98	6.05
2015-16(RE)	224636.00	12491.21	5.56
2016-17(BE)	249099.00	13593.78	5.46

Trend of Beak-up of R&D expenditure (Defence R&D)

	2014-15 (Actual)	**2015-16(MA)**	**2016-17(BE)**
Pay & Allowances	2306.78	2444.10	2875.73
Other Exp. (Transport, Training, Misc.)	344.91	396.58	449.35
IF Creation & Maintenance	1324.96	1303.32	1558.62
R&D Activities	9742.94	8647.21	8830.08
% of R&D Activities w.r.t. overall R&D Budget	71.00	67.60	64.40

The percentage of expenditure in Defence R & D in relation to the overall GDP during the last five years and current financial year is as under:

Total GDP vs Defence R&D Expenditure (Rs. in Cr)			
Year	**Total GDP***	**Defence R&D Expenditure**	**Defence R&D Expenditure (as % of Total GDP)**
2010 - 11	7674148.00	10149.00	0.13
2011 - 12	8832012.00	9894.00	0.11
2012 - 13	9280803.00	9794.80	0.10
2013 - 14	9921106.00	10868.88	0.11
2014 - 15	10656925.00	13257.98	0.12
2015 - 16(BE)*	11350962.00	12391.21	0.11

(Based on Economy Survey 2014-15)
*(*Advance Estimates, based on CSO Press Note 2015-16)*

No authentic information is available on expenditure on Defence R & D as a percentage of GDP in respect of Developed Countries.'

Projects in Pipeline

Cluster	Projects
Aeronautics	Advanced medium combat aircraft (AMCA) Chatak UCAV AESAR based Integrated Sensor Suite for Maritime Applications (ABISS) Heavy Drop Systems, Aerial delivery systems
Armaments & Combat Engineering	Electric Gun & Turret Driver System (ELEGANT) New Generation Main Battle Tank (NGMBT) Guided Pinaka Anti-Tank Guided Missile for MBT Arjun Mk-II
Electronics & Comm. Systems	High Band Jammer Advanced Gunners Main Sight EW Suite for LCA Mk-II
Life Sciences	CBRN Programme on Defence Technologies- Phase II Biofuel technology for Defence Applications
Micro Electronic Dev. & Comp. Systems	Secure Storage Media System (SSMS) GaN MMIC for applications up to X-band; GaN HEMT MMICs
Missiles & Strategic Systems	Submarine Launch Cruise Missile Akash NG NRSAM (Army) Extended range SAM
Naval Systems & Materials	Supersonic Missile Assisted Torpedo System (SMART) Advanced Nano materials for Defence applications Ballistic Helmet

2.5 On the reasons for decline, if any, in the allocation made on Defence R & D to the total Defence budget during the twelfth plan period, and the projects which have suffered due to reduced allocations, if any, the Ministry of Defence stated as under:

> 'Every year budget requirement is projected by DRDO based on the ongoing projects/programmes and futuristic requirements. Nearly, 80% of total budget is being utilised on Mission Mode (MM) Projects with deliverables for Armed Forces. Short falls in budget affect Technology Development (TD), Science and Technology (S&T), Development of Infrastructure and Facilities (IF), and projects related to Product Support (PS). Due to shortage of funds, projects and other ongoing activities are re-prioritized. Government is making all possible efforts to meet the budgetary requirement of DRDO, within the available resources, so that its flagship programmes do not suffer due to lack of funds'.

2.6 During oral evidence the representatives of DRDO has submitted the following on the expenditure pattern of allocations provided during 2015-16,consumption of budget and projects in the pipelines:

> "As regards the year 2015-16, our allotment was Rs.13,540 crore. As on date, the figures which have been put up in the slide are the figures which were as on 15th of March. By the end of 30th of March and as on date, that is, till yesterday, we have already booked orders worth Rs.13,194 crore and we will be booking 99 plus percentage even after funds which were released to us in the month of March because DRDO was well prepared. All our bills were lying with the payment authority, and the minute the budget got allotted all those bills were released.
>
> As far as consumption of budget is concerned, whatever budget that has been allotted we have spent above 99 per cent.
>
> The third question was this. We have always asked for higher allocation. Like, Sir, we have been asking at the range of Rs.18,000 crore to Rs.19,000 crore. Sir, when we propose an allocation for these projects, as the Secretary was mentioning, we have a long-term integrated plan which the Armed Forces make. From that we make a long-term technology plan for DRDO. From the technology plan, we make projects. So, what we have done is that we have divided the projects for the 13th Plan into three categories – 'A'. 'B' and 'C'; 'A' category projects were absolutely necessity project and the rest were in the other two categories. So, what we do is that we monetise the absolute necessity projects on a yearly basis and we arrived at this amount of Rs.18,000 crore.
>
> Sir, as you must have seen in one of the slides, we projected many of the projects in the pipeline. Now, the fact that we get about Rs.3,000 crore to Rs.4,000 crore less, many of those projects are still not sanctioned. Many of them are high value projects which we are hoping that we will get additional funds and we can start those projects. However, we have started all the groundwork because they are high priority projects. We have started peer review. We have started preparing the project proposals. We have kept the proposals ready. The minute we get more funds allotted to us, we take up projects in that area."

2.7 The Committee desired to know about the details of projection for Twelfth Plan in respect of Research and Development. The Ministry in its written replies submitted the following:

'Overall XII Plan outlay, the planned cash outgo and carry forward to XIII Five Year Plan under different technology disciplines are given in Table below:

Discipline	New Projects (Rs in Cr)		Ongoing Projects (Rs in Cr)		Carry Forward to XIII FYP (Rs in Cr)
	Plan Outlay	Cash Outgo	Plan Outlay	Cash Outgo	
Aeronautics	28647	19573	5299	4906	9467
Armaments	2774	2762	382	354	40
Combat Vehicles & Engineering	3254	3080	661	612	223
Electronics and Communication Systems	8003	7658	1068	989	424
Microelectronic Devices and Computational Systems	7303	6939	194	180	378
Life Sciences	1165	1147	324	300	42
Advance Materials	246	203	210	194	59
Missiles	51489	50832	10539	9758	1438
Naval Systems	2048	1690	269	249	378
Aeronautical Development Agency (ADA)	15000	8400	-	-	6600

(Above data does not include strategic systems)

Manpower

2.8 As regard to the authorised and existing strength of Scientists in DRDO, the Ministry in a written note furnished to the Committee:

'The authorized and existing strength (as on 01 Feb 2016) of scientists in DRDO is 7878 and 7863, respectively. (This includes Service Officers also).'

2.9 The Committee also desired to know about the number of scientists who have left DRDO during the last five years with reasons. The Ministry in its written replies stated as under:

'Number of scientists who resigned from DRDO during the last five years is given below.

Year	No of Scientists Resigned
2011	86
2012	67
2013	57
2014	33
2015	37
Total	**280**

2.10 The Committee further asked the Ministry to give specific reasons of brain drain. The Ministry explained as under:

'Scientists, who have resigned, have indicated their personal/domestic grounds as the reasons for leaving DRDO.'

2.11 On the steps being taken by DRDO to put a check on brain drain, if any, from DRDO and to make a career for scientists in DRDO an attractive one, the Ministry through a written note submitted as under:

'The trend of resignations of scientists from Defence Research and Development Organisation (DRDO) has declined considerably after the implementation of recommendations of Sixth Central Pay Commission. The number of resignations has now come down to less than 0.5% of the total strength of scientists in DRDO. Government has introduced a comprehensive 'Incentive Scheme for DRDO Scientists', details are given in the succeeding paragraphs. This has also helped in checking the brain drain of scientists from DRDO.

Financial Incentives

i) **Additional Increments:** Two additional increments are given to Scientists (Recruitees/Promotees) in the Pay Band-3 (Rs.15600-39100) with Grade Pay of Rs. 6600 and Rs. 7600 and to those in the Pay Band-4 (Rs.37400-67000) with Grade Pay of Rs. 8700 and Rs. 8900.

ii) **Professional Update Allowance**. Scientist 'B', 'C' & 'D' are granted Rs. 12,500 p.a., Scientists 'E' & 'F' Rs. 25,000 p.a. and Scientists 'G' & above Rs. 37,500 p.a. as Professional Update Allowance.

iii) **Variable Increments**. Up to maximum of six increments are granted to deserving Scientists at the time of promotion.

Growth related Incentives

To give better growth and promotional avenues to the Scientists in DRDO, Merit based Flexible Complementing Scheme (FCS) is in place, where promotions are based on assessment and not on available vacancies. Under the FCS, Scientist recruited at the level of Sc 'B' in Pay Band-3 with grade pay of Rs.5400, can move up to the level of Scientist 'H' in HAG scale (Rs. 67000-79000). Thereafter, the level of Distinguished Scientist in the HAG+scale (Rs.75500-80000) is achievable on personal up-gradation basis.

Proposed Incentives

Efforts are on to implement Performance Related Incentive Scheme (PRIS) in the DRDO as per recommendation of 6th CPC which has not been agreed to by Min of Finance, despite the same being in operation in Department of Space and Department of Atomic Energy. Grant of Performance Related Incentive Scheme (PRIS) to the DRDO will further rejuvenate the morale of DRDO scientists/staff and encourage them to perform better.

Further, in its suggestion to the 7th CPC, DRDO has proposed following incentives for scientists:-

- Grant of 20% Organisation PRIS and 10% Group PRIS for DRDO at par with Department of Space and Department of Atomic Energy.

- Grant of a separate pay component at the rate of 25% of the Basic Pay to scientists at all levels as 'Scientific Pay' to be granted for allowances and pensionary benefits.

Qualification/Skill Improvement

Scientists in DRDO are being sponsored for M.E./M.Tech programmes at IITs, IISC and other reputed institutes under the Research & Training Scheme at Government expense so that they can up-grade their knowledge and skills. Further, scientists are also encouraged to complete Ph.D. in their respective field, for which necessary assistance is provided.

Recognition of Contributions

The contributions made by DRDO Scientists are recognized by the Government through various types of Awards being given to these Scientists at the Organization as well as National level. They are nominated to represent the country in Seminars/Conferences Internationally. Scientists are also nominated for Fellowship of various Professional bodies.

Improvement of Working Environment

Mentoring and guiding is a constant interactive process for maintaining a constant level of research standards. Infrastructure and state-of-the-art lab/equipment test facilities, etc are provided to them.'

2.12 About the incentives given to the DRDO scientist in line of ISRO and other organisations, the Ministry in its written replies stated as under:

`Incentives given to the scientists of ISRO,DAE as well as to DRDO are for attracting talent and the same are not linked to profit making which is not the aim of these Departments. At present, there is a disparity in the incentives given to the scientists of these strategic departments. A comparative chart of incentive schemes operational in DOS/ISRO & DRDO is given below:

Comparative chart of incentive schemes operational in DOS/ISRO & DRDO

S.No.	Details of the Incentive Schemes	DOS /ISRO	DRDO
1.	Incentive of two increments to Scientists/ Engineers in PB-3 with Grade pay of Rs.6600 &Rs. 7600 and in PB-4 with Grade pay of Rs. 8700 and Rs.8,900.	Operational since 1st Jan 1996.	Operational since 1st Jan 1996.
2.	Special pay @Rs.2,000/- in lieu of higher pay scale to Scientists /Engineers in the Pay scale of Rs. 18,400-22,400 i.e. PB-4, Grade Pay of Rs.10,000/-.	Operational since 1st Jan 1996 @ Rs.2,000. After 6th CPC, @ Rs.4,000.	Operational since 1st Jan 1996 @ Rs.2,000. After 6th CPC @ Rs.4,000.
3.	• Professional Update Allowance for Scientists / Engineers in Pay scale below Rs. 14,300 @ Rs.10,000/-. • Scientist in the Pay scale of Rs. 14,300/- or higher @ Rs. 20,000/-. • Scientist / Engineer in the Pay scale beginning with Rs. 18,400/- or higher @ Rs. 30,000/-.	Implemented w.e.f. Oct, 2007	Implemented w.e.f. 1st Sept, 2008 after 6th CPC.
4.	Variable increments at the time of promotion upto six increments for Scientists.	Implemented w.e.f. 1st Jan, 2009	Implemented w.e.f. 1st Jan, 2009
5.	**PRIS – Old Guidelines**		
	• Organisational Incentive @ 20% to all employees (i) with attendance of not less than 150 working days and (ii) ACR should not be "not worth retaining or poor". • Group Incentive @ 10% on	• PRIS (O) w.e.f. 1st Sept 2008 onwards. **Condition:** Attendance not less than 150	• PRIS(O) w.e.f. 1st Sept, 2008 not sanctioned • PRIS (G). Not approved.

	achieving set targets.	working days. ACR should be average or above. • PRIS (G) approved but not implemented	
6.	**PRIS with Revised Guidelines**		
	• PRIS(Organisational) upto 20% with minimum attendance of 175 days. CR Grading Good/B+. • PRIS(Group) upto 10% for achieving the set targets. CR Grading should be Very Good or above. Minimum attendance 175 days.	• PRIS (O) implemented w.e.f. 2010-11. • PRIS (G) Not yet implemented.	• PRIS(O) sanctioned w.e.f. Financial year 2011-12 linked to achievements in the RFD for year 2011-12. PRIS(O) to be paid out of savings. Not yet implemented. • PRIS(G) approved w.e.f. 29th Dec, 2012. Not implemented.

The Performance Related Incentive Scheme (PRIS) given to ISRO and DAE is not linked to any profitability, whereas the same has been denied to DRDO scientists with a view that PRIS should be linked to savings/profits.

DRDO is not a profit making Organisation. It has a vision to empower India with cutting-edge technologies and equip our Services with internationally competitive systems. DRDO has proven its competence to produce state-of-the-art strategic and tactical military hardware and related technologies in diverse disciplines such as Aeronautics, Armaments, Combat Vehicles, Combat Engineering, Electronics, Missiles, Cyber Security, Low Intensity Conflict, Life Sciences, NBC Detection and Protection, Advanced Materials, Naval Systems, etc. At the core of this technological strength of DRDO is its expertise in system design, system integration, testing and evaluation and project management built over the last five decades, which have enabled it in developing indigenous capabilities in weapons and their delivery systems. Over the past five decades DRDO has developed a number of systems/products/ technologies, a large number of which have been productionised. The value of systems/products/technologies developed by DRDO and inducted into the Services or in the process of induction stands at over Rs 2 lakh Cr. This figure does not include Strategic Systems.

DRDO has transformed into a highly professional Organisation with a strong technology base and management systems to undertake indigenous development

of state-of-the-art Defence systems in a holistic manner including design, development, integration and production. DRDO has made the country proud through achievement of technological self-reliance in a number of critical areas including ammunition, armored systems, missiles, sonar systems, electronic warfare systems, NBC Defence, advanced computing, etc.

Today, India is one of the few countries in the world to have:

- Multi-level Strategic Deterrence capabilities.
- Capability to produce an Inter Continental Ballistic Missile.
- It sown Ballistic Missile Defence (BMD)Programme.
- Developed a Nuclear–Powered Submarine.
- Developed its own Main Battle Tank.
- An Indigenous 4th + Generation Combat Aircraft.'

2.13 On being asked whether the Defence Research and Development Organization (DRDO) has requested the Ministry of Human Resource Development, the University Grants Commission and other State Governments to bring changes in the education syllabus in order to meet the requirement of skilled manpower for domestic defence industries, the Ministry in its written replies has submitted as under:

- 'Defence Research & Development Organization has not sent any request to the Ministry of Human Resource Development/University Grants Commission or any State Governments to bring changes in the education syllabus to meet the requirement of skilled manpower for domestic defence industries. So far, as syllabus of universities is concerned, it is in the purview of Ministry of HRD/UGC to take desired steps. It is understood that the UGC had constituted an Expert Committee to review the existing syllabus of Defence and Strategic Studies at the Under Graduate/Post Graduate and M.Phil./Ph.D levels, and also to suggest the amendments/modifications, deletions/ additions in the existing syllabus of defence and strategic studies. The recommendations of the Expert Committee were ratified by the UGC in its meeting held on 27th April, 2012. Universities, being completely autonomous in academic matters, are free to revise the syllabi and curricula as suggested by the UGC. The UGC has also decided to support the upgrading of the departments of defence and strategic studies in ten universities in the country during 12th Plan Period. As a follow up action, UGC has invited proposals from five universities recommended by the Expert Committee i.e. University of Allahabad, University of Madras, University of Pune, University of Manipur, and University of Punjab, for up-gradation of existing Department of Defence and Strategic Studies.

- On its part, DRDO collaborates with various universities/institutions for research & development studies in various fields of defence science & technology, which in turn leads to human resource development in the country. It is also pertinent to mention that Defence Institute of Advanced Technology (DIAT), a deemed university funded by the Department of Defence Research & Development, also provides M.Tech and Ph.D. programmes in the streams of Strategic Defence importance for participants,

Performance audit of DRDO laboratories is being done on case-to-case basis by audit authorities during the last few years.

Apart from this, DRDO has been audited by a number of committees in the recent past as listed below:

i) Kelkar committee – suggestions have been implemented
ii) Rama Rao committee – suggestions under the purview of DRDO have been implemented. The others have been forwarded to the Government for approval.
iii) Economic assessment conducted through NCAER.

The performance of a scientist is assessed through the Annual Performance Appraisal Report of each scientist which contains details of specific targets set for him for the year and his accomplishment by end of the year. Progress is also reviewed during the year through mid-term review. The scientist is also required to make presentation of his achievements before Assessment Board for his career progression in the service.'

Indigenization of Research and Development Activities

2.14 The Committee wanted to know about the indigenous production of Defence equipment designed and developed by the DRDO vis-à-vis the imported ones. In this connection, the Ministry in written reply intimated as under:

'India's Defence requirements in terms of indigenous systems are being taken care of by the Defence Research and Development Organisation (DRDO) which works in providing cutting-edge technologies and systems for the Armed Forces. DRDO has given the country a vast range of products and systems, ranging from the strategic Agni class of missiles, a family of radars and sonars for virtually every platform/application, Electronic Warfare (EW) systems, Main Battle Tank (MBT), combat aircraft and so on.'

Technologically advanced countries do not part with their critical technologies to developing countries. These countries offer only "Buy" category of systems to countries, like India. Therefore, we have to develop each system, sub-system, component ab-initio including infrastructure and testing facilities. DRDO has made enormous efforts to bring out high level of self reliance in Defence technologies.

Over the past five decades DRDO has developed a number of systems/products/ technologies, a large number of which have been productionised. The value of systems/products/ technologies developed by DRDO and inducted into the Services or in the process of induction stands at over Rs 1.996 lakh Cr. This figure does not include Strategic Systems.

Products/Systems/Technologies Developed by DRDO Inducted/Under Induction into Services as on 22 Dec 15		
Systems	Cost (Rs in Cr)	
	Inducted	Under Induction
Missile Systems	23863.25	46519.67
Electronics and Radar Systems	14010.44	23622.22
Advanced Materials and Composites	4400.90	608.84
Armament Systems	8406.67	19096.12
Aeronautical Systems	598.76	24668.59
Combat Vehicles &Engg Systems	13235.46	11499.54
Life Sciences Systems	292.21	305.70
Naval Systems	1061.06	1332.88
MED & Computational Systems	1450.64	4649.41
Total	67319.39	132302.96
Grand Total (Inducted + Under Induction)	Rs 199622.35 Cr	
Note: Strategic Systems not included.		
Supply order Number reflecting dates of production not available.		

Besides above, DRDO is developing advanced versions of many systems, like MBT-Mark-II, Rustom-II, LCA Mark-II, Long Range Missiles, etc. Trials of such systems are already going on. Some other major projects are nearing completion. After induction of these systems, our dependency on import will be further reduced. As far as costs of imported systems equivalent to indigenously developed systems are concerned, their costs are considerably higher as compared to indigenous systems.'

2.15 In regard to the contribution of services towards the Research & Development of high Technology Military Projects, in terms of budget and providing inputs for their operational requirement, the following information was given by the Ministry:

'Services have provided document on Long Term Integrated Perspective Plan (LTIPP), which has given inputs about the requirements of Services. Considering the LTIPP, DRDO has prepared a document on Long Term Technology Perspective Plan (LTTPP), which highlights the expected new technology developments in various areas. It is aligned with LTIPP of the Services. The technology development plan covers the 12th, 13th and 14th Five Year Plans (FYP) (2012-2027). The document also covers the new technologies which are not mentioned in LTIPP but will be of interest to Services and covers the period beyond 2027.

Services have provided Qualitative Requirements and valuable inputs to DRDO through following mechanisms of reviews and interactions:

i) Quarterly Interaction Meetings (QIM)
ii) Project Monitoring & Review Committee (PMRC)
iii) Executive Board Meeting (EBM)
iv) User Assisted Technical Trails (UATT)
v) User Trials

In major Mission Mode (MM) Projects, especially all Strategic programme projects Users i.e. Service Personnel are involved right from the execution. It ensures on job training, immediate modifications as per requirements and state of the art product.

For naval projects, DRDO depends upon Indian Navy to provide platforms such as ships, helicopters and submarines and other logistic support for installation and final sea trials. Navy is also part of different levels system acceptance, like Factory Acceptance Test (FATs), Harbor Acceptance Trials (HATs) and Sea Acceptance Trials (SATs), etc. Similarly, Army and Indian Air Force also provide platforms for trials and actively involve in development trials and training activities.

Major Mission Mode Projects are being funded by Services and costs are shared between DRDO and Services.'

2.16 The Ministry was asked to give the details of DRDO's 93 ongoing projects including Agni V, Agni IV, Nirbhay Cruise Missile, K-15, Nag, Astra, AWACS, Arjun main battle tank, Tejas LCA, etc. The Ministry supplied the information as per given below:

'Details of major ongoing projects (Cost above Rs. 100 Cr) of DRDO with name of project, developing agency/laboratory, date of sanction, original estimated cost of the project, likely date of completion, revised cost of the project and revised date of completion are given at ***Annexure "A".***

2.17 The Ministry was asked to furnish details about the projects selected during 10th, 11th Plan and 12th Plan, their present status of these projects and how much money has been spent on them, the Ministry supplied the following information in this regard:

'Details of major projects (cost more than Rs. 100 Cr) sanctioned during 10th 11th and 12th Plan (from 01 April 2007 to 26 Feb. 2016) with date of sanction, sanctioned cost and present status are given at ***Annexure "B ".***

2.18 The Ministry was again asked to give reasons for the cost & time overruns in the DRDO projects and remedial measures taken to check the cost and time overruns. The Ministry replied as under:

'The following are some of the reasons for the cost & time overruns in the DRDO projects:-

i) Ab-initio development of the state-of-the-art technologies.
ii) Non-availability of trained/skilled manpower in respect of ab-initio development projects.
iii) Non-availability of infrastructure / test facilities in the country.
iv) Technical/technological complexities.
v) Non-availability of critical components/equipment/materials and denial of technologies by the technologically advanced countries.
vi) Enhanced User's requirements or change in specifications during development.
vii) Increase in the scope of work.
viii) Extended/long-drawn user trials.
ix) Failure of some of the components during testing/trials.'

2.19 On the issue to bring accountability in the delayed projects, the Ministry submitted the following:

'DRDO has observed that there have been delay in development, trials and production of DRDO developed systems due to various reasons. After implementation of recommendations of Rama Rao Committee, seven Technology Clusters have been created. Concerned Director General of Technology Cluster has been delegated adequate financial and administrative powers to carry out research and development as per mandate of DRDO. All CCS projects are being monitored by the Cabinet Secretariat through Monthly Report submitted before 10th of every month on status and progress of each CCS Project. "DRDO Management Council" (DMC), chaired by the Secretary, Defence R&D, reviews the progress of ongoing projects periodically in which all Director Generals, Additional Financial Advisor, Integrated Financial Advisor are the members of DMC. Problems faced by Project Directors are sorted out then and th1ere to complete projects as per schedule. Online monitoring of projects is being carried out at DRDO HQrs level as well as DG Cluster level to complete ongoing projects on-time.'

Collaboration with universities/academic institutions

2.20 The Ministry submitted that details of seven centres of excellence at various institutions/universities sponsored by DRDO during 11th and 12th Plan as well as benefit accrued to DRDO as under:

`Basic objectives of the above Schemes/Boards are:-

i) To foster knowledge-based growth of Defence related subjects in the country, strengthening and integrating national resources of knowledge, know how, experience, facilities and infrastructure.

ii) To catalyze the much needed cross-fertilization of ideas and experiences between DRDO and outside experts in scientific and technical fields that contribute to Defence technology.

iii) To launch and coordinate research in specified areas of Defence in academic institutions.

iv) To create conditions suitable for attracting talent through research collaborations and other academic exchanges and adopt synergic approach towards National needs and priorities in the field of Defence technology.

v) To lead the Technological Innovations useful for Combat Multiplier both for the near and long term.

Details of the number of projects sanctioned under each Scheme/Board, amount sanctioned to various research agencies including academic institutions during 11th and 12th Plan (01 March 2015) are given in the following tables:-

Sl. No.	Name of Scheme/Board	No. of Projects Sanctioned	Total Cost of Sanctioned Projects (Rs. in Cr)
1.	Extramural Research (ER)	197	139.73
2.	Aeronautical Research & Development Board (AR & DB)	146	47.77
3.	Life Sciences Research Board (LSRB)	35	9.185
4.	Naval Research Board (NRB)	112	29.69
5.	Armament Research Board (ARMREB)	16	2.63

Agencies involved in carrying out sponsored research are mostly doing basic/fundamental research. Therefore, outputs of these projects are taken as inputs in /futuristic projects. Products are developed by the developing agencies and finally produced by the designated manufacturing agencies.'

2.21 DRDO has established the following 7 Centres of Excellence:

Centres of Excellence	
1.	DRDO Bhartihar University (DRDO BU) Centre of Excellence, Coimbatore
2.	Advanced Centre for Research in High Energy Materials (ACRHEM), University of Hyderabad
3.	Centre of Excellence in Cryptology, ISI Kolkata
4.	Centre of Millimeter Wave Semiconductor Devices and Systems, University of Calcutta, Kolkata
5.	Advanced Centre of Excellence on Composite Materials, NAL Bengaluru
6.	Research and Innovation Centre (RIC), Chennai
7.	Centre of Excellence for Aerospace Systems Design and Engineering, IIT Bombay, Mumbai

Agencies involved in carrying out sponsored research are mostly doing basic/fundamental research. Therefore, outputs of these projects are taken as inputs in /futuristic projects. Products are developed by the developing agencies and finally produced by the designated manufacturing agencies.

2.22 In this connection it was further asked to state the budgetary provision given to the Universities, their actual allocation and system of monitoring thereon. The Ministry informed as under:

There is no budgetary provision for Universities. Only projects through 'Grants-in-Aid' are funded from DRDO. The 'Grants-in-Aid' programs are monitored by 3 tier review mechanisms. Various Research Panels comprising of domain experts review the proposal and their progress regularly. Besides, the research boards under their Chairpersons and also the DMC-DRDO Apex body review progress of programs bi-annually.

System of monitoring:

i) Projects costing less than Rs. one Cr are being monitored by Project Review Committee meetings held yearly.

ii) Projects costing more than Rs. one Cr are being monitored by Project Advisory Committee meetings held yearly and Research Programme Implementation Group meetings held half yearly.'

Dropped/abandoned Projects

2.23 The Ministry was asked to give the details of major projects which were undertaken by DRDO and dropped/abandoned alongwith the reasons and cost involved. The Ministry replied as under:

'The details of major projects which were undertaken by DRDO and later on dropped/abandoned, along with the reasons and cost involved, are given below:-

S. No	Lab	Project	Date of Sanction	Likely Date of Completion	Sanctioned Cost (Rsin Cr)	Expenditure (Rs. in Cr)	Reasons for closure
1	ADE	Fabrication of 55 NosSudershan Mk-I Kits for Evaluation Trials	Jan12	Jan16	85.13	00.10	Requirement dropped by user
2	CAIR	Semantic Service Oriented Architecture	Jun12	Dec 14	04.90	00.18	Being taken up another project with enhanced scope

3	LRDE	Multi Mission Radar	Feb12	Jun15	193.44	0 6.60	Subsumed in QR-SAM Project
4	RCI	Missile Mass Properties Measurement System	Jun09	Jun13	10.00	05.77	Technical Shortcoming
5	VRDE	Development of 4-Strok Horizontally Opposed 4 Cylinder Engine for UAV	Nov10	Oct15	45.80	02.76	Change in User Requirement from 130 HP Gasoline Engine to 180 HP Diesel Engine
6	DRDE	Development of Technology for Light Weight, Washable NBC Protective Suits for the Paramilitary and Army	Feb11	Dec12	04.75	02.37	Technical objective met. User trials could not be completed.

Private Sector Participation

2.24 On being asked to furnish a list of the laboratories and projects in which private sectors are involved and technologies developed by DRDO have been transferred, if any, to Private Sector, the Ministry in its written reply has furnished as under:

> `DRDO's products and systems are being developed with partnership of more than 1000 industries including small and medium enterprises (SMEs). The excellent synergy in partnership between DRDO and Industries has led to an enhanced defence industrial base in the country.
>
> Details of DRDO laboratories/establishments developed products and technologies transferred to private industries during the last five years are given at ***Annexure "C".***
>
> DRDO has come out with the 2nd edition of compendium of industrial partners titled 'DRDO Industry Partnership - Synergy & Growth'. The compendium provides a guide about the core competencies of the industries that will go a long way in strengthening the Government's 'Make in India' initiative.
>
> The 'DRDO Guidelines for Transfer of Technology' and the 'Compendium of DRDO Developed Defence Products with Export Potential' were released by Hon'ble Raksha Mantri Shri Manohar Parrikar on 23rd Sep 2015.
>
> In the current year, 75 licensing agreements for ToT to 57 industries were facilitated. Under the Accelerated Technology & Commercialization (ATAC) Programme, Explosive Detection Kit Technology, developed by DRDO which was transferred to M/s Crowe & Co., USA has been evaluated by US Armed Forces and is in the process of being inducted into Nigerian Armed Forces also. 81 NOCs for export have been granted by MoD for 198 products for about Rs 11429 Cr, out of which, 60 products of worth Rs 7210 Cr are based

on technology developed by DRDO. DRDO has entered into 37 licencing agreements for Transfer of Category 'B' Technologies, including a global ToT for Explosive Detection Kit (EDK) in USA, through the ongoing DRDO-FICCI-ATAC programme. In addition, Transfer of Category 'A' Technologies to industries for 40 technologies have also been done directly through laboratories.'

Quality Control

2.25 On the quality check conducted for the products developed by DRDO, the Ministry supplied the following information:

'Quality checks are conducted for the products developed by DRDO. The following Government Quality Assurance (QA) agencies are authorized to conduct quality check on the products so productionised:-

- Indigenous Missile Systems - Missile System Quality Assurance Agency (MSQAA), Hyderabad.
- Products for Indian Army-Directorate General Quality Assurance (DGQA).
- Products for Indian Air Force- Directorate General Aeronautical Quality Assurance (DGAQA).
- Products for Indian Navy :-
  - Armament – Directorate General of Naval Armament Inspection (DGNAI)
  - Others – Directorate of Quality Assurance (Warship Projects) (DQA(WP)) - Directorate of Quality Assurance (Naval) (DQA(N))
- Strategic systems – Strategic Systems Quality Assurance Group (SSQAG)

DRDO has instituted Grants-in-Aid schemes to nurture available research talent in universities, academia and other research centres, including industries in the country. The identified projects/ programmes are being funded by DRDO through the followings:-

1. Extramural Research (ER).
2. Aeronautical Research & Development Board (AR & DB).
3. Life Sciences Research Board (LSRB).
4. Naval Research Board (NRB).
5. Armament Research Board (ARMREB).

Basic objectives of the above Schemes/Boards are:-

- To foster knowledge-based growth of defence related subjects in the country, strengthening and integrating national resources of knowledge, know how, experience, facilities and infrastructure.

- To catalyze the much needed cross-fertilization of ideas and experiences between DRDO and outside experts in scientific and technical fields that contribute to defence technology.

- To launch and coordinate research in specified areas of defence in academic institutions.

- To create conditions suitable for attracting talent through research collaborations and other academic exchanges and adopt synergic approach towards National needs and priorities in the field of defence technology.

- To lead the Technological Innovations useful for Combat Multiplier both for the near and long term.

Details of the number of projects sanctioned under each Scheme/Board, amount sanctioned to various research agencies including academic institutions during 12th Plan (up to 1 Feb 2016) are given in the following tables:-

Name of Scheme/Board	No. of Projects Sanctioned	Total Cost of Sanctioned Projects (Rs. in Cr)
Extramural Research (ER)	197	139.73
Aeronautical Research & Development Board (AR & DB)	146	47.77
Life Sciences Research Board (LSRB)	35	9.185
Naval Research Board (NRB)	112	29.69
Armament Research Board (ARMREB)	16	2.63

DRDO has established three technology centers of excellence at Universities. Three new technology centers are being established at academic institutes. One more technology center will be established in near future.

There is no budgetary provision for Universities. Only projects through 'Grants-in-aid' are funded from DRDO. The "Grant-in-aid' programs are monitored by 3 tier review mechanisms. Various Research Panels comprising of domain experts review the proposal and their progress regularly. Besides, the research boards under their Chairpersons and also the DMC- DRDO Apex body review progress of the programs bi-annually.

- Projects costing less than Rs 1 Cr are being monitored by Project Review Committee meetings held yearly.

- Projects costing more than Rs 1 Cr are being monitored by Project Advisory Committee meetings held yearly and Research Programme Implementation Group meetings held half yearly.'

CHAPTER -III

EX-SERVICEMEN CONTRIBUTORY HEALTH SCHEME

The Ex-Servicemen Contributory Health Scheme (ECHS) was launched with effect from 01 April 2003. With the advent of this scheme, Ex-servicemen pensioners and their dependents who were only entitled for treatment in Service hospital are now authorized for treatment, not only in Service hospitals, but also in those civil/private hospitals which are specifically empanelled with the ECHS. The Government of India finances the Scheme and lays down policy framework and executive control is exercised by the Department of Ex-Servicemen Welfare of the Ministry of Defence. The Scheme is managed through the existing infrastructure of the Armed Forces so as to minimize administrative expenditure.

3.2 The ECHS Central Organization is located at Delhi and functions under the Chief of Staff Committee (COSC) through AG and DGDC&W in Army HQ. The Central organization is headed by Managing Director, ECHS, a serving Major General. ECHS is also an attached office of Department of Ex-Servicemen Welfare (DoESW), Ministry of Defence (MoD). Executive control is exercised by DoESW and technical and administrative control is through the Adjutant General's branch of Army HQs. At the middle level are the Regional Centres.

3.3. All 28 Regional Centres sanctioned by the Government across the country are functional. ECHS Polyclinics are designed to provide 'Out Patient Care' which includes consultation, essential medical investigation and provision of medicines, specialized consultations, investigations and 'In Patient Care' (Hospitalization) are provided through spare capacity available in Service hospitals and through civil hospitals empanelled with ECHS. There are five types of ECHS Polyclinics i.e. Type 'A', 'B', 'C' D, & E based on the number of Ex-Servicemen residing in that area. Authorization of Contractual Staff in each type of ECHS Polyclinic is based on the load capacity of each ECHS Polyclinic.

3.4 A total of 15,21,563 Ex-servicemen have enlisted with the scheme alongwith 32,02,610 dependents. The total beneficiaries of the scheme thus amount to 47,24,173 as on 31 May 2015.

3.5 Out of the 426 Polyclinics sanctioned by the Government, 420 have been made functional as on 29 February 2016. As per the Ministry, the efforts are being made to operationalize all the remainder Polyclinics and acquire land at those locations where

Defence land is not available for construction of Polyclinics. The Government has approved 1445 civil hospitals for empanelment with ECHS.

3.6 The allocations made during the last five years are as under:

Revenue

(Rs. in crore)

Financial Year	Projection	(Budget Estimate)	(Revised Estimate)	(Modified Appropriation)	Expenditure (CGDA)
2010-11	1180.00	901.04	1061.04	1061.04	1055.31
2011-12	1600.00	991.14	1109.95	1225.95	1224.22
2012-13	1860.00	1400.00	1473.86	1450.98	1430.85
2013-14	2082.95	1476.46	1570.68	1789.46	1781.38
2014-15	2489.21	1870.58	2470.58	2260.58	2236.17
2015-16	3532.12	2639.00	2609.00	-	-
2016-17	3600.00	2363.54			

Capital

(Rs. in crore)

Financial Year	Projection	(Budget Estimate)	(Revised Estimate)	(Modified Appropriation)	Expenditure (CGDA)
2010-11	44.00	37.00	2.50	3.60	2.82
2011-12	37.00	37.00	7.00	3.00	2.96
2012-13	37.00	37.00	6.50	5.43	2.67
2013-14	50.00	30.00	14.00	12.45	10.90
2014-15	50.00	20.41	5.91	5.11	*6.61
2015-16	50.00	30.00	13.00	-	-
2016-17	50.00	30.00			

*This incident of overbooking had been reported to O/o CGDA.

3.7 ECHS organization, which earlier was part of the Army budget, has now been shifted to Grant No. 20- Ministry of Defence (Miscellaneous). When asked about the reasons for allocation of Rs. 2363.54 crore in the BE 2016-17 under Revenue against Rs.2609.00 crore in RE 2015-16, the Ministry submitted as under:

> 'There has been a further reduction at MA stage by Rs 46.14 crore to Rs 2562.86 crore. The expenditure till the third week of March 2016 under the head is Rs 1919.91 crore.
> The reduction in BE 2016-17 was based on the trend of expenditure. The expenditure in 2014-15 was Rs 2236.17 crore.
> However, the progress of expenditure will be monitored regularly during 2016-17, and additional allocation sought from the Ministry of Finance, if required, during the year at RE/ supplementary stage.'

3.8 During oral evidence, a representative of the ECHS organization, on the issue of reduced allocation, submitted as under:

> "..In comparison to the funds that we have got last year, the funds have been drastically cut this year for ECHS. We would have problems in the current year. We have been sanctioned a very less amount than what we were expecting and it will be difficult for us to pull through for the entire year and we will require additional funding."

3.9 Clarifying on this issue, the Financial Advisor (Defence Services) deposed as under:

> "..it is a fact that this has moved over from the Army budget previous year to the miscellaneous. I mean, the rationale why we went over from Army budget to the miscellaneous is quite similar for the pension. Pension is a separate budget. As I was explaining in my presentation on the first day, DSE is only for the operations of the Services. We have kept out the pension as well as the ECHS which is a corollary or it flows out of it. I think, this is the first year in terms of shifting and rationalising the eight grants, or two grants and two DSEs. But I think we should be able to take care of this. Why wait till the RE? If they need, we should ask for in the first batch of supplementary which would be in the Monsoon Session."

3.10 The Committee's examination revealed that in BE 2016-17 an amount of Rs. 30 crore was provided for Capital expenditure. However, during 2015-16 only Rs. 13 crore were utilized under this head. The Committee sought reasons for again seeking Rs. 30 crore when the Ministry was unable to utilize this amount in 2015-16. The Ministry submitted as under:

(a) 'Ex-Servicemen Contributory Health Scheme (ECHS) being a growing scheme, various procurement process are under progress at different stages with procuring authorities assisting the ECHS namely Directorate General Defence Estates (DGDE), Directorate General Armed Forces Medical Services (DGAFMS), Military Engineering Services (MES) & Master General of Ordnance (MGO). The lead time involved in adherence to all procedural requirements contributes towards element of delay/non expenditure. Hence, optimum fund requirement are projected to avoid delay in procurement and additional expenditure due to cost escalation during subsequent financial year. Procurement cases can only be progressed based on availability of funds.

(b) Following are specific reasons for extended lead time:-

(i) Acquisition of land is extremely slow moving due to procedure & clearance required and finding suitable land for Polyclinics is time consuming process.

(ii) Construction is contingent on availability of land.

(iii) Permission for purchase of vehicles is under consideration.

(c) (i) Funds required for construction of ECHS buildings during financial year are Rs. 8.10 Crore.

(ii) Funds projected for purchase of land during financial year 2016-17 is Rs. 0.634 Crore.

(iii) Funds required for purchase of vehicles &equipments are Rs.11.10 Crore.

Thus Rs.19.834 Crore is the funds commitment for the on-going cases and the remaining amount of Rs.10.166 Crore is required for new cases.'

3.11 As per the Ministry, followings steps have been initiated to make the Scheme more efficient and responsive:-

a) 'Onlin eBill Processing: One of the major draw backs of the ECHS was delay in processing and payment of the bill of empanelled hospitals. This was mainly due to non availability of dedicated staff at various headquarters for the above task and the bills have to be physically moved to various headquarters for sanction by the Competent Financial Authorities (CFA) concerned. In order to obviate the same, sanction was accorded by the Govt to commence 'Online Bill Processing' at selected stations. At present all 28 Regional Centres have been brought under 'Online' bill processing system; w.e.f 01 Apr 2015. This has speeded up the processing and payment of empanelled hospitals' bills, as also ushered in total transparency.

b) Fixed Medical Allowance (FMA) for Beneficiaries Residing in Districts not Covered by ECHS: While ECHS facilities are optional for pre 01 Apr 2003 retirees, it is compulsory for post the date. On becoming member of ECHS, Veterans forfeit the benefit of FMA. Since ECHS is structured on the lines of CGHS, the existing provision in CGHS for grant of FMA to CGHS beneficiaries residing in non CGHS cities, proposed to be extended to ECHS. Presently, only 339 districts out of 675 districts of the Country are covered by the ECHS.

c) Outsourcing of Pharmacy Operation: ECHS membership is growing exponentially, which call for corresponding up-gradation of infrastructure and services for ensuring acceptable satisfaction level among ECHS beneficiaries. Existing system of medicines supply/issue is not commensurate with the actual requirement of medicines in ECHS. In view of the growing dissatisfaction among ESMs with regard to non availability/short supply of medicines, it was proposed to outsource pharmacy operations on pilot project basis at Polyclinics under two Regional Centres.

d) Authorised Local Chemist: Existing system of supply of medicine is not commensurate with the demand and aspiration for medicines. At present medicines are available to veterans from Polyclinics. Option of reimbursement for specific limited condition is also available in ECHS. Polyclinics get their supply of medicines from Armed Forces Medical Stores Depots (Essential Drug List), Senior Executive Medical Officers (Other than FOL) and limited local purchase.
CGHS, however has a better medicine satisfaction by adopting the concept of Authorised Local Chemist in addition to Central procurement. Chemists are empanelled locally by means of Tender enquiry and Polyclinics indent the not available medicines from these ALC for issue to beneficiaries. The proposal for adopting same methodology is under consideration.

e) Enhancement of Contractual Remuneration. Consequent to enhancement of remuneration of contractual manpower in CGHS, the contractual remuneration of

Medical Specialist, Gynecologists, Medical Officers, Dental Officers and Officer in Charge (OIC) Polyclinic has been revised wef 27 Nov 2015.'

3.12 The Committee have learnt that Comprehensive Policy on Procedure for Procurement of Drugs and Consumables for ECHS was issued by Government of India/Ministry of Defence on 25 November, 2003. At present, the financial limits per month, for local purchase of emergent, life saving and essential drugs, of Type A and B Non Military Polyclinics and Military Polyclinics without service Hospitals is Rs. 50,000 and that of Type C and D Non Military Polyclinics and Military Polyclinics without service hospitals is Rs. 30,000. Presently, on exhausting this monthly ceiling by Polyclinic, incidence for additional need arising in that month for procurement of emergent, lifesaving and essential drug is not addressed. The proposal for revision of the present ceiling was submitted in 2010 by ECHS to the Ministry of Defence.

CHAPTER IV

DIRECTORATE GENERAL QUALITY ASSURANCE

The Directorate General of Quality Assurance (DGQA) is under Department Of Defence Production, Ministry of Defence. This organisation provides Quality Assurance (QA) cover for the entire range of Arms, Ammunitions, Equipments and Stores supplied to Armed Forces. Apart from QA activities, the organisation is responsible for import substitution and associates with Defence Research and Development Organisation (DRDO) in the development projects. It also ensures Documentation, Codification and Standardisation Action for minimizing the variety of components / equipments. The other services rendered are promotion of small scale industries, Post procurement services, Defect Investigations and Technical Consultancy to the users, Ministry and the Production Agencies. The establishments under this organisation are spread all over the country where mainly the Ordnance Factories, Defence Public Sector undertakings and Industrial base exist. During the oral deposition, it was stated that DGQA also provided test facilities for various manufactures, including private manufacturers, on payment basis.

4.2 The DGQA projected its budgetary requirements as under :

Budget

(Value in crore)

YEAR	HEAD	PROJECTED	BE	RE	EXPENDITURE
2010-11	Revenue	620.55	565.38	596.48	590.76
	Capital	15.00	11.96	16.96	15.01
	Total	635.55	577.34	613.44	605.77
2011-12	Revenue	755.05	649.25	675.79	670.03
	Capital	30.00	20.00	16.00	7.10
	Total	785.05	669.25	691.79	677.13
2012-13	Revenue	847.23	796.33	674.62	697.36
	Capital	25.00	20.00	5.00	4.94
	Total	872.23	816.33	679.62	702.30
2013-14	Revenue	798.05	724.73	776.19	760.96
	Capital	15.53	5.45	12	11.12
	Total	813.58	730.18	788.19	772.08
2014-15	Revenue	886.04	832.80	851.89	818.17
	Capital	26.00	6.19	6.19	5.30
	Total	912.04	838.99	858.08	823.47
2015-16 (till Jan 16)	Revenue	1008.30	876.04*	932.91	683.40
	Capital	12.00	7.12	7.12	5.00
	Total	1020.30	883.16	940.03	688.40

2016-17	Revenue	1090.99	1068.10	-	-
	Capital	9.00	7.27	-	-
	Total	1099.99	1075.37	-	-

RE - Revised Estimates

BE – Budget Estimates

* Rs. 25 crores have been allotted foe DEO as additional grants for conducting Golden Jubilee celebrations on Victory of Indo Pak War 1965.

4.3 When asked if any compromises have been made or likely to be made due to reduced budgetary allocation, if any, against the projections made by the DGQA, the Ministry replied in negative.

4.4. The Ministry submitted following information as regards the details of additional allocation sought by DGQA:

> ''During the first batch of supplementary demands Rs 83.75 crore additional demands for Defence Exhibition Organization (DEO) was projected under Revenue (other than Salary), Minor Sub-Head 109-C Miscellaneous Expenses(Code Head 382/30). The same was not allotted. The demand was revised to Rs 51.26 crore during Second Batch of Supplementary Demands. The variation in demand was due to the revised projections made by the DEO.
>
> An additional demand of Rs. 3 crore was made under Capital Head 4076(code Head 931/31), which was projected during the third and final batch of Supplementary demands.'

4.5 DGQA asked for Rs 1,068.10 crore under Revenue Head for BE 2016-17 against Rs. 932.91 crore for RE 2015-16. The Committee desired to be apprised of the reasons for increase of Rs.135.91 crore in the BE 2016-17. The Ministry responded as under:

> '…The increase of Rs. 135.91 crore from RE 15-16 to BE 16-17 is mainly due to increase of Rs 94.10 crore under 'Pay and allowances', sought by the organization to cater for the expected requirements of the 7th Pay Commission. This increase also, inter-alia, includes expenditure to be incurred on Aero India 2017 and for training of personnel etc.'

4.6 As regards the information regarding inspections per month done by DGQA, the Ministry furnished following information:

> 'DGQA organization carries out inspection of defence stores supplied by Ordnance Factories, DPSUs, Trade Firms and ex-import. These inspections are done at various stages of manufacture and at Final Acceptance stage. On an average DGQA Organization carries out approx. 18,000 inspections per month.'

4.7 The Committee sought details regarding the procedure adopted by DGQA in inspection of stores. The Ministry submitted as under:

'The process of Quality Assurance is carried out by DGQA in following stages:-

(a) Formulating Quality Assurance Plans which include establishing technical specification, acceptance criteria and detailed inspection methodology.

(b) Assessing Quality of the inputs, process & the end product by the following methods:-

(i) Carry out audit of suppliers manufacturing processes and Quality Management System. Audit the records of internal quality control carried out by Supplier on the inputs material and manufacturing stages of critical stores and subject critical input items to test.

(ii) Process audit to assess the capability of the process to deliver the required Quality output consistently and Control/Surveillance inspection of critical features of product during manufacturing stages.

(iii) Final Acceptance Inspection is carried out as per laid down Quality Assurance Plan during which the product is subjected to dimensional, material, fitment and performance tests. Proof firing is carried out for all arms and ammunition at DGQA ranges before final acceptance.

(iv) Pre Delivery Inspection to assess Quality of imported stores/equipment prior to dispatch from country of origin to check for compliance with technical specifications by carrying out tests in accordance with DGQA Acceptance Test Procedures (ATPs). This is followed by Joint Receipt Inspection of the stores on arrival at India before final acceptance.'

4.8 The Committee also desired to know how DGQA helps in inducting a new system to Army. The Ministry submitted as under:

'Whenever a new system is inducted into the Army, DGQA is an integral part of the process and plays a pivotal role in all stages of induction right from the General Staff Qualitative Requirement (GSQR) formulation stage till the Joint Receipt Inspection of the store. The functions performed by DGQA during the various stages of induction are:-

(a) Formulation of General Staff Qualitative Requirement (GSQR). DGQA is responsible for providing technical inputs to service HQ for formulation of General Staff Qualitative Requirement (GSQR) and Request for Proposal (RFP).

(b) Technical Evaluation Committee (TEC). DGQA as part of TEC checks the compliance of the Technical bids in accordance with the RFP.

(c) User Trials. Field trials are carried out by the User in different terrains to validate the performance of the system as per the specific qualitative requirements. DGQA associates during these trials.

(d) DGQA Technical Trials and Environmental Testing. Subsequent to User Trials, DGQA carries out independent Technical Trials and environmental testing to ascertain the conformance to the design parameters and reliability

of the system. Detailed tests are carried out in DGQA laboratories and Proof Ranges in accordance with the applicable standards. To ensure the consistency in performance for prolonged usage under extreme climatic conditions, the systems and subsystems are subjected to environmental tests in the laboratories.

(e) Finalization of Specifications. After the system has been shortlisted by the service HQs/MoD for future procurement, DGQA finalizes the detailed specifications and the Acceptance Test Procedures (ATP) based on which the future inspection and acceptance of the system is carried out.

(f) Pre-Dispatch Inspection (PDI). DGQA conducts PDI at the vendor premises to assess conformance to detailed specifications as per Acceptance Test Procedure (ATP). In case of imported system Joint Receipt Inspection (JRI) is carried out on its receipt in India, by DGQA.'

4.9 During oral evidence, the Defence Secretary highlighted the transformation required in the role of the DGQA:

"**..** the philosophy of quality management has undergone drastic change in the modern times. But probably we are sticking to the old paradigm where through quality checking at various points inspector raj is being promoted. We are trying to come out of it…The quality management should be the responsibility of the producer.

The producer will be responsible for the quality and the responsibility of the DGQA should be to audit the system. That is how we are trying to move."

4.10 When queried about the shortage of manpower in DGQA, a representative of the organisation deposed as under:

"We have already started taking action on this. Mainly, these deficiencies have arisen because of various cuts during initial stages and there was recruitment ban also, especially if you see group 'C' and 'D'. Finally, that ban has been lifted and we are in the process of recruiting."

CHAPTER -IV

NATIONAL CADET CORPS

National Cadet Corps (NCC) was established under the NCC Act, 1948. Today it has presence in 670 districts of the country with authorised cadet strength of 15 lakh. NCC aims at developing character, comradeship, discipline, a secular outlook, the spirit of adventure and ideals of selfless service amongst young citizens. Further, it aims at creating a pool of organized, trained and motivated youth with leadership qualities in all walks of life, so that they become useful citizens and serve the Nation with all their might regardless of the career they choose. Needless to say, the NCC also provides an environment conducive to motivating young Indians to join the armed forces. The motto of NCC is 'Unity and Discipline'.

5.2 NCC has a dual funding pattern where both the Central and State Governments meet the expenditure on NCC activities in a properly specified manner. The idea behind sharing of expenditure by the State Governments is to ensure that they too have a sense of participation and belonging in the various activities undertaken by the NCC cadets towards nation building. The Central Government bears expenditure on the following items:-

(a) Pay & Allowances of Services personnel , Civilian personnel and NCC Officers
(b) Transport expenses
(c) Expenditure on office accommodation and contingencies in Directorate General, NCC, State NCC Directorates and Training Academies
(d) Expenditure on equipment, vehicles and clothing
(e) 75% expenditure on Camp training in all States (except J&K and NER).

The State Government bears expenditure on:

(a) Pay & Allowances of State Government, Civilian employees posted to NCC
(b) Office accommodation and Contingencies in NCC group Hqrs and Units
(c) Allowance for NCC cadets and NCC Officers
(f) Institutional training in all states (except J&K and NER)
(g) 25% of camp expenditure in all States (except J&K and NER).

Budget

5.3 The budget of NCC for the last five years is as under: -

(Rupees in crore)

YEAR	HEAD	PROJECTED	BE	RE	EXPENDITURE
2011-12	Revenue	1083.22	958.51	892.98	710.66
	Capital	25.50	25.50	5.50	3.15
	Total	1108.72	984.01	898.48	713.81
2012-13	Revenue	1306.89	1078.80	820.05	791.18
	Capital	121.00	50.00	1.50	0.69
	Total	1427.89	1128.80	821.55	791.87
2013-14	Revenue	1277.78	881.62	953.06	873.35
	Capital	31.00	5.50	1.00	0.68
	Total	1308.78	887.12	954.06	874.03
2014-15	Revenue	1244.57	1019.67	953.10	965.47
	Capital	34.00	5.50	1.00	0.37
	Total	1278.57	1025.17	954.10	965.84
2015-16 (till Jan 16)	Revenue	1248.53	1016.39*	1083.27	949.37
	Capital	23.00	5.00	1.10	0.78
	Total	1271.53	1021.39	1084.37	950.15 (upto Jan 16)
2016-17	Revenue	1139.07	1188.23	-	-
	Capital	13.80	1.15	-	-
	Total	1152.87	1189.38	-	-

* The figure does not include the additional budget of Rs. 25 crore allotted to DG NCC by re-appropriation.

5.4 Break up of allocation of Rs 1,188.23 Crore at BE (2016-17) stage under Revenue head of expenditure and the proposed utilization, as submitted by the Ministry, are as under:-

Sl No	Head of Account	Details of expenditure	Amount (in Cr)
(a)	Salary	Pay & allowances of service personnel and civilian personnel.	981.85
(b)	Transportation	To hire civil transport for move of personnel/stores (training stores, equipments, clothings, back loading of discarded vehicles), expenditure on cost of warrants and Military Credit notes and foreign travel under Youth Exchange Programmes.	19.75
(c)	Stores	This sub-head caters for requirement of clothing, equipments, motor vehicles and other stores. The expenditure anticipated is as under:- Clothing - Rs 28.12 Cr Equipment - Rs. 9.00 Cr Vehicles - Rs 9.50 Cr Stores - Rs 2.11 Cr Total - Rs 48.73 Cr	48.73

(d)	Revenue Works	Payment of rentals in respect of hired State Directorate Office premises, living accommodations, payment of water and electricity tariff, revenue works, minor works, maintenance and special repairs.	12.50
(e)	Expenditure on Training	This sub-head caters for camp expenditure, Expenditure on Trek, Expedition and other Training activities and Office Contingency Grant (Miscellaneous Expenditure) of HQ DGNCC,17 state NCC Directorates and two OTAs.	120.00
(f)	Information Technology	This sub-head caters for expenditure on IT Hardware, Software, Maintenance, Stationery and consumables and Training in respect of HQ DGNCC and 17 state NCC Directorates and two OTAs.	4.40
(g)	Charged Expenditure	This caters for expenditure towards compensations awarded by Courts of Law in MACT cases, death during firing/training and arbitration cases etc.	1.00
TOTAL			**1188.23**

5.5 The Ministry supplied following information on the areas where compromises have been made or likely to be made due to reduced budgetary allocation against the projections made by the NCC:

'Against a projection of Rs. 308.19 crore at Revised Estimates (RE), an allocation of Rs. 250.48 crore only was made under budget head of Revenue – non salary. This may affect the purchase of clothing, Central purchase of Motor Transport and Central purchase of equipments. Though the allocation for Financial Year 2016-17 for budget head 'Revenue-Non Salary' is as per the projections, due to inadequate allocations in RE for Financial Year 2015-16 will spill over to Financial Year 2016-17 making it inadequate.

For the Financial Year 2016-17, the projected and allocated amount under sub-head 'Capital' are as under :-

Rs in crore

	Sub Head 'Capital'	Amount Projected by NCC	Amount Allocated
(a)	New Works (1/907/44)	3.00	1.15
(b)	Carry over works (1/907/45)	3.00	
(c)	Capital Acquisition (1/907/47)	7.8	Nil

Due to less allocation following compromises are likely to be made:-

(a) The Capital work pertaining to Construction of office building of NCC Directorate Rajasthan for Rs. 550.2 Lac has been sanctioned in Financial Year 2015-16. Allocation for the same can not be made due to non-availability of funds (under Capital Head 1/907/44).

(b) There are a number of works which are under processing such as :-

(i)Construction of NCC Nagar Complex at Chandrasekharpur, Bhubaneswar for NCC Dte Odisha.

(ii)Construction of Married Accommodation for officers and Permanent Instructional staff posted of NCC at Puducherry including NCC Officers Mess at Puducherry.

(iii)Special repairs to Quarters of Officers, JCOs & NCOs of NCC at rakshaVihar, Solapur, Maharashtra.

(iv)Less number of revenue works and special repairs would have to be planned, which would further compromise the upkeep and maintenance of buildings of NCC.

(c) Compromises likely to be made due to reduced allocation for import of Microlites ex-Slovenia (Budget Head 1/907/47).The requirement of funds under Capital Head (4076, Minor Head113-NCC,Sub Major Head-01 (Army) under 01/907/47) is Euros 7,025,984.44 for opening Of 'Letter of credit' (LC) to make payments as per the delivery schedule. The funds are required for FFE release in Indian Rupees as per the exchange rate prevailing at the time of making payments, for which 10% variation in exchange rate of Indian Rupees to be catered for, for making payment in Euros. For this, opening of LC is to be initiated in August, 2016. As per delivery schedule, 16 Microlites is to be delivered in Financial Year 2016-17 for which Rs7.8 crore was projected. However, no amount is allocated. This may result in default in contractual obligations and delay in procurement.'

Expansion plan of NCC

5.6 The total number of educational institutions at present covered by NCC is 10,372 Schools and 5,444 Colleges. In all, 4,893 schools and 2,966 colleges are presently waitlisted. The ongoing Expansion Plan is likely to be completed by 2018-19 would reduce the current waiting list marginally as this expansion is based on priorities laid down by the Government.

5.7 During oral evidence, a representative of NCC elaborated on the reasons for the long list of waitlisted institutions in the Country:

"..There is a lot of aspiration from all over the country for inducting NCC in their schools and colleges but I would like to say that we have an organisation which conducts the NCC training in the way that we are supposed to do, a mostly uniformed organisation. For example, a major unit of army caters to 3520 cadets, that is authorised to this unit. At the maximum it can take care of 3520 cadets which

includes 2400 junior division boys and girls and 1120 senior boys and girls. The issue now is that we have 15,816 institutions on our rolls. Today with the organisation that we have we can only cater for these. We have also about 7800 institutions which are in the waiting list. That is why the government has approved a five phase expansion plan of which the first two have been already completed. This is the third phase going on and two more are to come."

5.8 To meet the aspirations of the youth, increase in cadet strength by 2 lakhs over a period of five years has been accorded by the Government. This involves raising of additional Units and Group HQs. As per the priorities, the new Units are planned to be raised in coastal areas, areas affected by Left Wing Extremism and Border areas. 19 Army, 2 Navy, 2 Air Uits and 2 Gp HQs were raised in 2011-12 and 2012-13 as part of phase I and II of expansion. 1 Gp HQ, 7 Army Units and 7 Naval Units have been sanctioned on 27 October 2015 for raising during 3rd Phase, 2 Gp HQs, 17 Army Units, 4 Navy and 3 Air Units are planned to be raised during 4th and 5th Phase.

5.9 When asked whether the Ministry of HRD agreed to the Ministry of Defence's case for incorporating best practices of NCC in the curriculum of schools as also making NCC as a part of education policy, the Ministry replied as under:

'The matter has already been taken up with the Ministry of HRD followed by a reminder. The matter is under consideration in consultation with Ministry of HRD.'

Infrastructure Development

5.10 There is a pressing requirement to improve office accommodation of NCC Gp HQ and units and as also residential accommodation for the officers and PI staff, especially which are located in far off and non-military stations so as to ensure functional efficiency. The Central Advisory Committee (CAC) chaired by the Hon'ble Raksha Rajya Mantri has already accorded in principle approval for the pan-India project of 'development of infrastructure in NCC'. Case is under process with MoD for clearing the proposed phased infrastructure and seeking revision of various related policy issues to facilitate sanction for projects**.**

5.11 When queried about the update regarding the proposed phased infrastructure and seeking revision of various related policy issues to facilitate sanction for projects**,** the Ministry submitted as under:

'NCC has been constantly interacting with Ministry of Defence for fructification of various pending projects. As a result Government Sanction has been accorded/headway made on the following land/works cases:-

(a) Sanction accorded for one project - Construction of office complex for Rajasthan NCC Directorate at a cost of Rs. 5.50 crore.

(b) Government Sanction accorded for transfer of cost free land at Guntur.
(c) Government Sanction accorded for transfer of cost free land at Puri.
(d) Government Sanction accorded for transfer of cost free land at Merima (Nagaland).
(e) Sanction for the following two projects are likely to be accorded in the next financial year (2016-17):-

(i) Construction of NCC Nagar Complex at Chandrashekharpur, Bhubaneswar at a cost of Rs. 26.99 crore. (case under process)
(ii) Construction of NCC Nagar Complex at Puducherry at a cost of Rs. 11.30 crore. (Case under process)

Some other matter is under consideration in consultation with NCC and Defence (Finance).'

PART-II

OBSERVATIONS/RECOMMENDATIONS

ORDNANCE FACTORIES

Budgetary Provisions

1. The allocation at BE 2015-16 for Directorate Gen eral of Ordnance Factories was Rs. 3,644.30 crore. This has been reduced to Rs. 1,752.53 crore at RE stage. The reduction is Rs. 1,891.77 crore. The BE for the year 2016-17 is Rs. 1,953.29 crore. There is Rs. 1,691.01 crore less allocation during the year 2016-17 in comparison to BE 2015-16. In their earlier reports, the Committee have been expressing their concern over wide variations between the projections and actual allocations at the stage of BE and RE. The Committee in their 9th Report had desired that deduction from the Budget Estimate be kept to minimum and only on account of very valid justifiable reasons. The Committee are apprised that due to constraints of funds, Ordnance Factories Board was directed to prioritize its Capital fund requirement. In their 7th Report on Action taken by the Government on the recommendations contained in the 9th Report on Demands for Grants (2015-16) on Ordnance Factories and DRDO, the Committee had observed that the allocations for Ordnance Factories Board were sanctioned late, thereby compelling it to cut short its Committed Liabilities and thereby falling short of the financial targets. This further led to application of cut by the Ministry of Finance. Therefore, the Committee had desired that the timely allocations at BE stage should be provided. During 2015-16, Ordnance Factories Board was considering to increase the supplies in excess of Rs. 11,266 crore on the basis of requirements of Armed Forces. Ordnance Factories Board required an additional budget of Rs. 1,321 crore for an increased supply of Rs. 2,271 crore. However, at RE stage during 2015-16, there was reduction of Rs. 1,891.77 crore. This is a sorry state of affair. The Committee also observe that there is large scale deficiency of equipments in Army due to inadequate production capacity of Ordnance Factories Board. Therefore, there is a strong need to ramp up the capacity of Ordnance Factories Board. The value of production during the year 2015-16 up to Feb, 2016 is Rs. 10,925 crore against the target of Rs. 13,514 crore. The value of production during the year 2015-16 is higher in comparison to that in the year 2012-13, 2013-14 and 2014-15. Against the planned supplies of Rs. 64,870 crore, the actual supplies made during first four years of 12th

plan is Rs. 45,387 crore. In view of the above deficiency of Ordnance Factories Board, need to further enhance its capacity to arrest shortage of ammunition and vehicles of Army, the Committee are of the strong view that due importance should be given to Ordnance Factories Board and adequate budgetary provisions should be provided at the RE stage.

Delays in Projects undertaken by Ordnance Factories Board

2. The Committee note that there is long delay in completion of projects related to T-72 variants, engines for ArmoUred Vehicles, spares for T-72 and T-90 tanks, Akash Booster and Sustainer, large caliber weapons, HMX Plant, Pinaka, Ammonium Percolate, MPV and 125 mm FSAPDS. The delay ranges from 3 to 9 years. The major reasons for delay of these projects are due to delay in procurement of plant and machinery and delay in completion of civil works by MES. Against the required investment of Rs. 2,394 crore, the investment made till February, 2016 is Rs. 683.55 crore. The Committee are concerned to note that Rs. 1,710.45 crore are yet to be allocated. The important projects have already been delayed considerably. During the course of deliberations with the representatives of Army and Ministry of Defence, the Committee were apprised that due to inadequate production capacity, there is a shortage of Armoured Vehicles with the Army. During examination of Demands for Grants in the year 2015-16, the Committee had observed that due to non-availability of funds as well as absence of commensurate load from Army, expenditure for augmentation of capacity for manufacturing of T-90 tanks from 100 to 140 nos. was prioritized. The Committee are concerned to note that all thESE important items approved are nowhere near completion. The construction work of Ordnance Factory at Nalanda has also been carried forward to 12th plan though it was initiated during the 10th plan. The Committee also note that Ordnance Factories depend to a large extent on Military Engineering Services (MES) for execution of civil works related to their projects. Delay in completion of civil works by MES is one of the major reasons affecting the timely completion of the projects. The Committee view this delay very seriously which is affecting the operational preparedness of Army and other consumers of Ordnance Factories. The Committee feel that proper planning at the initial stage in consultation with all the stakeholders should be undertaken thoroughly deliberating upon the negative factors causing delays and a comprehensive strategy chalked out for timely completion of the projects within a realistic time-frame. The Committee desire that action taken in this regard may be communicated to them.

Underspending on Modernization of infrastructure

3. The Committee note that modernization of infrastructure is a continuous process in Ordnance Factories with a view to update the plants and machineries matching both the qualitative and quantitative requirements of the products projected in the prospective plans. During the years 2010-11 to 2014-15, the Capital Outlay for modernization programme was Rs. 2,348.45 crore, against which the actual expenditure was Rs. 2,226.31 crore. The Committee observed that Rs. 122.14 crore has remained unutilized although Ordnance Factories Board manages 41 manufacturing units where the amount could have been utilized. During the year 2015-16, Rs. 500.05 crore has been provided. The BE for the year 2016-17 is Rs. 735.68 crore. The delays in many important projects like Pinaka Rocket System, T-90 tanks have resulted due to delay in augmentation of capacity for manufacturing by the Ordnance Factories Boards. The Committee are not happy with the pace of modernisation and under-utilization of funds by Ordnance Factories Board. The Committee opine that optimum utilization should also be given due importance and desire that appropriate steps should be taken to achieve modernisation.

Research and Development (R&D) Activities

4. During the year 2015-16, the allocation for R&D in the Ordnance Factories at BE stage was Rs. 75 crore. The allocation at RE stage was Rs. 85 crore. The allocation at BE stage during the year 2016-17 is Rs. 67.12 crore. In comparison to BE 2015-16 and BE 2016-17, there is a reduction of Rs. 7.88 crore. Against the allocation of Rs. 370.79 crore during the 12th Plan period, Ordnance Factories Board has undertaken in-house R&D projects of Rs. 416.79 crore for development of the products indigenously which are at various stages. The Committee note that some efforts are being made by Ordnance Factories to develop new products through in-house R&D efforts. However, the Committee are dismayed to note that the total allocation towards R&D continues to be on the lower side. The Ministry has furnished the percentage of R&D expenditure and compared with value of production produced during the years. The Committee feel that the allocations of funds should not be linked to the turnover of the Ordnance Factories rather it should be steadily increasing over the years. The Committee also note that the while the Ministry is emphasizing on `Make in India' projects, at the same time the allocations under R&D is not in commensuration with the avowed mission of the

Government. Therefore, the Committee strongly recommends that adequate budgetary support should be provided for undertaking R&D activities by the Ordnance Factories.

Manpower Shortage in Ordnance Factories

5. The Committee note that Ordnance Factories are suffering from acute shortage of manpower. The Committee found that against a sanctioned strength of 1,37,474 technical personnel in various Ordnance Factories, the actual strength is only 71,576 as on Jan, 2016. This shows that there is a huge gap of almost 52.07 percent between the sanctioned and actual strength of technical personnel. The existing strength of non-technical staff is only 17113 as against the sanctioned strength of 23500 which is a significant shortfall. Similarly, the sanctioned strength of Group 'A' officers is 2123. The actual strength is just 1797. The Committee are concerned to note that this huge shortage of manpower in Ordnance Factories, particularly in the technical category will have a negative impact on manufacturing and ensuring improvement in the products. Therefore, the Committee recommend that immediate steps should be taken to bridge the huge gap between the sanctioned and actual strength in order to achieve manufacturing of technically advanced products by Ordnance Factories. The Committee will also like to know when the last exercise for manpower planning was conducted and whether the modern technology and computerization of processes resulting into improved efficiencies were taken into account.

Restructuring of Ordnance Factories

6. The Committee in their 9th report had recommended for constitution of a high-level Committee to go into the functioning and organizational structure of Ordnance Factories Board and give its recommendations on restructuring of Ordnance Factories to make them more professional to meet the present day requirements. However, the Committee are concerned to note that there are no known plans for restructuring of Ordnance Factories, hence, no budgetary provisions have been planned for the same. The Committee wish to mention that the Kelkar Committee had emphasized on restructuring of Ordnance Factories. The recommendations of importance as made by the Committee have not been taken into cognizance by the Ministry till date. The Committee deplore such casual approach of the Ministry and strongly recommend that credence should be accorded to the Kelkar Committee

recommendations on restructuring of Ordnance Factories. Action taken in this regard must be intimated to the Committee.

DEFENCE RESEARCH AND DEVELOPMENT ORGANISATION

Budgetary provisions for Defence Research and Development

7. The Committee note that there has always been a mismatch between the projected amount and allocation made at BE as well as RE stages and actual expenditure. During the year 2016-17, against the projected demand of Rs. 18,782.86 crore, the allocation, at BE is Rs. 13,593.78 crore. The BE during 2015-16 was Rs. 14,358.49 crore and the final allocation at RE was Rs. 124,91.21 crore. The difference between BE and RE is Rs. 1,867.28 crore. As against this, the actual expenditure is Rs, 11,603.11 crore. Thus, there is a surrender of funds to the tune of Rs. 888.1 crore. The allocation at BE has been continuously reduced from BE 2014 - 15 to 2015-16 (Rs.15, 282.92 crore to 14,358.49 crore) and from 2015- 16 to 2016-17 (Rs. 4,358.49 crore to Rs. 13,593.78 crore). The difference between BE 2015-16 and 2016-17 is Rs. 764.71 crore.

8. The Committee also note that out of the total Defence Budget, the share of DRDO which was 5.79per cent in 2011-12 was reduced to 5.34per cent in 2013-14. This share had slightly improved to 6.05 per cent in 2014-15, but was again reduced to 5.52 per cent in 2015-16. The Budget Estimates for 2016-17 amount to 5.46 per cent of the Defence Budget. The share of (R&D) budget in the GDP of the Nation has also been declining over the years. It has reduced to 0.10 per cent in 2012-13 from 0.13 per cent in 2010-11. However, this share has slightly improved to 0.11 per cent and 0.12 per cent in 2013-14 and 2014-15 respectively. But it has reduced to 0.11 per cent in the Budget Estimates for 2016-17. As for the percentage share of R&D activities with respect to overall R&D Budget during 2016-17, it is only Rs. 64.40 per cent in comparison to 71per cent during 2014-15 and 67.60 per cent during 2015-16.

9. Of the 64.40 per cent funds earmarked for R&D activities, the requirement of funds for strategic schemes is Rs. 5,200 crore which is about 60 per cent. Rest of the allocations will be spent on infrastructure, pay and allowances and other items of expenditure. The Committee also note that each year, the budget requirement is projected by DRDO based on the ongoing projects/programmes and future requirements and nearly 80per cent of total budget is being utilised on Mission Mode (MM) Projects with deliverables for Armed Forces. Short falls in budget affect

Technology Development (TD), Science and Technology (S&T), Development of Infrastructure and Facilities (IF), and projects related to Product Support (PS). Due to shortage of funds, projects and other ongoing activities are re-prioritized. Government is making all possible efforts to meet the budgetary requirement of DRDO, within the available resources, so that its flagship programmes do not suffer due to lack of funds.

10. During the course of deliberations, the representatives of DRDO admitted that the current budgetary allocation will not suffice even for ongoing projects and revenue commitments. Major projects for futuristic technology requirements of tomorrow have been put on hold due to pending allocation of funds and infrastructure activities planned for future need additional funding. Therefore, DRDO require sustained annual commitment of funds year on year for taking up new projects. There is also an imperative need to carry out research and cutting edge technology development for building a strong indigenous technology base. The Committee strongly feel that undertaking these activities requires adequate budgetary support. The Committee are disappointed to view the depletion of budgetary allocation for DRDO which has the effect of jeopardizing the scientific and technological base of Defence forces. The Committee therefore, strongly feel that all possible measures must be taken immediately to meet the budgetary requirements of DRDO.

11. The Committee have been further apprised that for high value projects, DRDO has started the ground work which includes peer review of project proposal as these are of high priority category. The projects would be taken up once the allocation has been secured. The Committee strongly urge the Ministry to provide adequate funds for these high value and high priority projects so that the work already done on these projects does not go waste. The Committee may be apprised of the steps taken in this regard.

12. Keeping in mind the depletion of allocation for R&D, both in absolute and percentage terms and depletion of the percentage share of R&D activities w.r.t. overall R&D Budget and overall resource crunch of Government of India, the Committee desire that the Ministry should explore the possibility of considering the budget for R&D platform development as a sum of R&D Budget of DRDO, DPSUs and Ordnance Factories as well as the Private Sector. The Committee are of the view that due care should be taken to synergize the R&D activities being undertaken by all these organizations in order to avoid duplication of Research and Development

and saving on cost and time. As a consequence thereof, more funds can be made available for undertaking research work. The Committee also note that DRDO's products and systems are being developed with partnership of more than 1000 industries including small and medium enterprises (SEM). In view of limited funds available with DRDO, the Committee are of the view that there is need to re-look at this aspect, as to how the industries will sponsor for manufacturing the products and DRDO will only assist them in design and development assignment, without spending from its own budget. The Committee desire that DRDO should take necessary steps in this regard under intimation to them.

Need to prepare a Technological Road Map

13. The Committee observe that DRDO has developed the following major systems for the Forces viz. Army, Navy and Air force - Army: Prithvi, Agni, Akash, BrahMos, Lakshya Nishant, MBT Arjun Mk-I, AAD Mk-I, AERV, Sarvatra, Pinaka, ROV, Radar-3D TCR, WLR, BFSR, Samyukta EW, DivyaDrishti and Samvahak. Navy: Dhanush, LRSAM, BrahMos, Sangraha EW, Varuna ESM, Dolphin ESM, Humsa NG, USHUS,TAL, Revathi – Radar, Maareech, Varunasta, Submarines and Escape Set. Air Force: Prithvi, Akash, MRSAM, Lakshya, Eagle EW, LCA Tejas, AEW&C, Rohini, Aslesha, SAR-Radars, Avionics for MiG 29, Su-30, Laser Designator cum TI, Aerial Delivery Systems and CPSS.

14. The Committee, while appreciating the work done by DRDO, nevertheless, also feel concerned to note that even after 58 years, there is no clear cut technological road map prepared. DRDO is creating a platform and integrating a number of sub-components. But, R&D is about developing certain key technologies akin to that of ISRO's capability in space which has not been developed by DRDO so far. The Committee are of the view that as the custodian of R&D for national security, while laboratories are expanded, technologies too need to be developed, or else, no useful purpose will be served. Therefore, the Committee feel the need to emphasize on the Ministry that it is high time for DRDO to prepare a technological road map and develop certain key technologies on the lines of ISRO so as to strengthen our Defence base. The Committee further are of the view that DRDO should focus on key high technologies in coordination with DPSUs and the low end technologies can be assigned to capable reputed Private Sector by involving them in the system integration and providing adequate financial support. This will minimize the delay and limitations posed due to financial constraints. This will also

further facilitate in creating a R&D network. The Committee desire to be apprised about the action taken in this direction.

Manpower in DRDO

15. The Committee are happy to note that in DRDO, the existing strength of 7863 scientists, is almost equal to the sanctioned strength of 7878. Thus, the shortfall in manpower in the organisation is negligible. Also, the Committee appreciate the fact that from the year 2011 to 2015, the rate of exodus of scientists from the DRDO has decreased. This is a welcome development. The Committee feel in this regard that positive steps such as the 'Incentive Scheme' for Scientists could be initiated in the DRDO so as to minimize the attrition of Scientists from the organization to zero per cent.

16. The Committee, however, feel concerned to note that there has been no review/increase in scientific manpower of DRDO since 2001, though the number of projects as well as technological and tactical Defence requirements have increased manifold. The Ministry has intimated in this regard that the proposal is pending with the Ministry of Finance. The Committee recommend that this matter may be taken up with the Ministry of Finance on top priority so that the manpower requirements of DRDO and India's strategic needs can be taken care of properly. This will further enhance research capability which can be exported and revenue earned thereof can be used for more R&D.

17. On the requirement of scientists, the Committee note that various steps are being taken by DRDO to generate interest in Defence technologies among school and college students with the aim of encouraging them to take up Defence R&D as a career. While the Committee appreciate the efforts being made in this direction they feel that concerted efforts are needed to attract genuine young talent to opt for Defence R&D as a career. In this regard, the Committee opine that a detailed research of the best practices being followed by the major countries in the world be undertaken and an action plan based on this study drawn up for consideration. The viability of the practices followed internationally vis-à-vis the local scenario may be worked upon and shared with the Committee for their information and consideration and further examination in this regard.

Projects abandoned/closed by DRDO

18. The Committee express their deep concern on the wasteful expenditure incurred by DRDO on closure of major projects like Airborne Surveillance Platform, Cargo Ammunition, GPS based system as an Alternative to Fire Direction Radar, Development of 30mm Fair Weather Towed AD Gun System, Light towed AD Gun system and 30 mm Light Towed AD Gun System after getting these projects sanctioned. The Committee desire that they be informed of the basis on which these projects were chosen and the specific reasons which forced the Government to close them. The Committee fail to understand as to why, at the initial stage itself, before the projects were sanctioned, the possible constraints and bottlenecks were not foreseen. The Committee opine that the reasons attributed for the closure of various projects like Probable Duration of Completion(PDC), extension not being approved, one out of two parallel methods being found more feasible, requirement of additional funds, etc. cited by the Ministry could have been tackled better at the initial stage itself through proper planning and following a concurrent engineering and development approach.

19. The Committee recommend that in future there should be a scientific, technical and concurrent audit of every ongoing project by an independent agency so that such closures are avoided in future. The Committee also strongly feel that the Ministry should re-evaluate the reasons and also seek expert advice before taking a decision towards closing down any project of DRDO in future so as to avoid wastage of public funds as also help in sustaining the projects, which can prove to be beneficial for the country.

Delays in Projects

20. There are 93 ongoing major projects in different DRDO labs. These include Agni IV, Agni V, Nirbhay Cruise Missile, K-15, Nag, Astra, AWACS, Arjun Main Battle Tank, Tejas LCA, etc. The Committee are dismayed to note that out of 45 major ongoing projects (costing more than Rs. 100 crore), there have been cost revisions in 11 and time revisions in 16 projects. Besides, 13 projects are more than 5 years old, i.e. sanctioned prior to 2010. While 17 major projects (costing more than Rs. 100 crore) were sanctioned during the 11th Five Year Plan (April 2002 to March 2007), none has yet been completed. Moreover, three of these have been under closure, two under short closure and three under evaluation. The Committee are perturbed to

observe that the projects being undertaken are not executed as per schedule and inordinate delay in execution of almost all the projects has become a common phenomenon. The Committee, while deploring this attitude, desire that concrete steps be taken to put in place a mechanism to oversee project execution so that they are implemented in a stipulated time-frame. Steps proposed to be taken in this direction may be intimated to the Committee.

21. During the course of deliberations, the Defence Secretary acknowledged that DRDO, by itself, is also responsible for delay in its research work. The Committee, in this regard, take note of the problems faced by DRDO in the matter of non-availability of platform for trials. The Committee feel that a better coordination between DRDO and the Services could easily solve this bottleneck and also cut short the time frame in the development and testing of weapon systems. The Committee, therefore, feel that the Ministry should make concerted efforts in this direction so that testing and trial platforms are always available to them for crucial research and development work.

22. The Committee note with immense surprise that although an elaborate mechanism is in place which includes adequate financial and administrative powers to Directors General of technology clusters to carry out research and development as per the mandate of DRDO, monitoring of all Cabinet Committee on Security (CCS) projects by the Cabinet Secretariat, etc., the projects are being delayed. The Committee, in this regard, feel that there is some lacuna in the implementation of this system. The Committee, therefore, recommend that more effective efforts are required to be made for ensuring timely completion of each project.

23. The Committee agree with the suggestions of the Defence Secretary and strongly recommend that a mechanism should be developed so that the DRDO, the production agency and the user agency work in tandem right from the conceptualization stage, which it is felt, can result in preventing unnecessary delay in the implementation of various projects of vital importance.

24. The Committee also recommend that keeping in view the huge public money involved in these projects and the fact that these directly affect the Defence preparedness of the country, accountability must invariably be fixed in case of inordinate delays in executing projects.

Kaveri Engine

25. During the course of deliberations, the Committee expressed apprehension over the perennial delay in the development of the indigenous Kaveri engine to meet the requirement of LCA which was sanctioned way back in 1989. The Committee was informed by the Defence Secretary that a total amount of Rs. 2100 crore had been spent on this Project till date. The Committee was also apprised by the representatives of DRDO of the current status of the Project and the fact that solutions were being evolved with support of some experts within the country as well as outside for the completion of this project.

26. The Committee desire that infrastructure to test aero-engines should also be created within the country so that flying testing of engines can be done in a timely manner without carrying the engine to a foreign country and finding availability of slot testing agency etc.

Indigenisation of Research and Development Activities

27. The Committee appreciate the fact that Defence Research and Development Organisation (DRDO) has a number of achievements to its credit like the development of the strategic Agni class of missiles, a family of radars and sonars for virtually every platform/application, Electronic Warfare (EW) systems, Main Battle Tank (MBT), development of combat aircraft, etc. However, the Committee note that it is also a fact that the country is still heavily dependent on imports to meet its Defence requirements. Given the fact that technologically advanced countries are reluctant to part with their critical technologies with developing countries like India, it becomes all the more essential for our labs to develop each systems, sub-systems, component *ab-initio* including information, infrastructural and testing facilities. The Committee are also of the view that as original research takes a long time, therefore, DRDO may also think of developing a product through reverse engineering. The Committee recommend that the Ministry of Finance should provide adequate budgetary support in this regard so that indigenization of R&D activities can be taken up by DRDO on a war footing. The Committee also feel that there is a need for an increase in the budget for R&D activities of DRDO specifically targeted at reducing dependency on other countries in critical and high technology areas, which can lead to the country becoming self-reliant in Defence Production.

Quality Control

28. The Committee feel that one of the important factors for quality management is the extent of knowledge of a user of the product to be produced for a specific project. So is the extent of his involvement in the conceptualization stage of the project on a permanent basis so that defects, if any, may be rectified during production stage itself and delivery of the product to the user may not get delayed for a long time. In this way, there would be a better scope for fixation of accountability, if the user does not suggest corrective measures/improvements and the product is not developed as per GSQR.

29. The Committee also feel it to be desirable on the part of DRDO to, at first, develop a product and later keep on improving on it by the way of 'categorizations/markings' viz. Mark I, II, III, IV etc, so that there is continuity in the assigned tasks to some extent. This approach would be preferable instead of aiming to create a 'perfect product' in one go. This will need a proper policy directive as also building the stages of the production systems for the initial and final products.

Public Private Partnership

30. During the deliberations, the Committee pointed out the gigantic gap in the availability of regular arms, ammunition and equipment ranging from 30 to 70 per cent, which adversely affects the ability to the combat our prime adversaries. The Committee stressed on the need for a complete revamp and re-orientation on how the DRDO functions and one of the major initiatives suggested by the Committee in this regard was to faciliate the active involvement of private sector, Universities, Indian Institute of Technologies and Indian Institute of Science which could play a major role in the resurgence of DRDO.

31. The Committee recommend that an environment may be created where Public Sector and Private Sector can work in collaboration, so that the R&D activities can be synergized and better coordination achieved. The Committee also feel that a level playing field needs to be provided to the Indian Private Industry and they may be allowed to tie up with foreign manufacturers to develop certain equipment based on the requirements of users.

Collaboration with universities/academic institutions

32. The Committee note that the budgetary provision to the Universities (under Extramural Research) has shown a decrease in the range of 30 per cent to 40 per

cent in 2014-15 (Allotment – Rs.40.63 crore, Released Grant – Rs.38.9100 crore) as compared to the provision in 2013-14 (Allotment – Rs.60.00 crore, Released Grant – Rs.57.5998 crore). This has a negative connotation.

33. The Committee had earlier recommended the opening of additional centres in various parts of the country, besides the seven centres of excellence established by DRDO at various institutions/universities in Bangalore, Chennai, Hyderabad, Coimbatore, Mumbai and Kolkata. The Committee felt that this initiative can foster knowledge-based growth of Defence-related discipline in the country, strengthen National resources of knowledge, know-how, experience, facilities and infrastructure. This will also catalyze the much needed cross-fertilization of ideas and experiences between DRDO and outside experts in scientific and technical fields that contribute to Defence technology.

34. The Committee recommend that the allotment of funds in this regard may be increased substantially for extension of such centers of excellence in various parts of the country as without the inflow of funds these projects will become unsustainable. The Ministry of Defence should accordingly take initiatives in this regard and the Committee intimated of the same.

35. The Committee also note the findings of CAG as enumerated in Para VII of the Annual Report of the Ministry, wherein it is stated that DRDO gave Grants-in- Aid to IITs, University, etc. without proper monitoring and the money was utilized against the provisions of the scheme. The Committee are also of the view that proper care should be taken by the personnel involved in DRDO monitoring system so that such instances do not recur.

EX-SERVICEMEN CONTRIBUTORY HEALTH SCHEME(ECHS)

36. The Ex-Servicemen Contributory Health Scheme (ECHS) was launched with effect from 01 April 2003. With the advent of this scheme, Ex-servicemen pensioners and their dependents who were only entitled for treatment in Service hospitals are now also authorized for treatment in those civil/private hospitals which are specifically empanelled with the ECHS.

37. The Committee note from the data supplied by the Ministry that only Rs. 2,363.54 crore are allocated against the projection of Rs. 3,600 crore in the Revenue Head of ECHS for the year 2016-17. The difference in the projection and allocation is a substantial amount of Rs. 126.46 crore, which would affect the overall working of ECHS in the field of Transportation, Stores, Information Technology, Medical Treatment Related Expenditure and Revenue works etc. In this regard, the Ministry submitted that the reduction in BE 2016-17 was based on the trend of expenditure as the expenditure in 2014-15 was to the extent of Rs. 2236.17 crore. However, the progress of expenditure will be monitored regularly during 2016-17 and additional allocation will be sought from the Ministry of Finance, if required, during the year at RE/ supplementary stage. The Committee have learnt that ECHS organization, which was part of the Army budget earlier, has now been shifted to Grant No. 20 - Ministry of Defence (Miscellaneous). The Financial Advisor (Defence Services), in his oral deposition before the Committee, submitted that this is the first year of rationalizing the Grants and provision of funds for ECHS should be taken care of at a later stage. The Committee would refrain from making any comment in this regard as of now as they have been assured by the Ministry, both in writing and during oral deposition, that the additional funds required by ECHS would be provided at the Revised Estimate or supplementary stage.

38. The Committee note that in the Capital Head, Rs. 30 crore has been allocated for the year 2016-17 against the projection of Rs. 50 crore. However, Revised Estimate for 2015-16 was only Rs. 13 crore. When queried in this regard, the Ministry submitted that ECHS, being a growing scheme, various procurement process are under progress at different stages with procuring authorities assisting the ECHS namely Directorate General Defence Estates, Directorate General Armed Forces Medical Services, Military Engineering Services and Master General of Ordnance. The lead time involved in adherence to all procedural requirements contributes towards element of delay/ non expenditure. The Committee would urge that budgetary planning should be done in a highly professional manner for achieving optimum utilisation of funds. They also desire that the Ministry, being the umbrella authority, should ensure timely and coordinated efforts expeditiously with various organizations assisting ECHS and involved in procurement process and infrastructure building.

39. All 28 Regional Centres of ECHS, with effect from 1 April, 2015, have been brought under online bill processing system. The Committee appreciate this effort of the Ministry which was much required to speed up the processing and payment of empanelled hospitals' bills. They further desire that a review of the online bill processing system be made at regular intervals with a view to updating the system accordingly.

40. The Committee have learnt that presently, only 339 districts out of 675 districts of the Country are covered by the ECHS. As submitted by the Ministry, since ECHS is structured on the lines of Central Government Health Scheme (CGHS), the existing provision in CGHS for grant of Fixed Medical Allowance (FMA) to CGHS beneficiaries residing in non-CGHS cities is proposed to be extended to ECHS. The Committee desire that keeping in view the inability of the Ministry to cover all the districts under ECHS even after a lapse of thirteen years since advent of this scheme and welfare of ECHS beneficiaries living in such districts, the proposal for grant of appropriate Fixed Medical Allowance be expeditiously approved and accordingly funds be released to ECHS. Moreover, the Committee would like the Ministry to set a timeline for covering all the districts under ECHS and the Committee be apprised.

41. The Committee note that a total of 15,21,563 Ex-servicemen have enlisted with the ECHS alongwith 32,02,610 dependents. The beneficiaries of the scheme thus amount total to 47,24,173 as on 31 May, 2015. ECHS membership is growing exponentially which calls for corresponding upgradation of infrastructure and services for ensuring acceptable satisfaction level among ECHS beneficiaries. The Ministry itself has submitted that existing system of medicines supply/issue is not commensurate with the actual requirement of medicines in ECHS. In view of the growing dissatisfaction among Ex-Servicemen with regard to non availability/short supply of medicines, it was proposed to outsource pharmacy operations on pilot project basis at Polyclinics under two Regional Centres. The Committee would like to be apprised of the outcome of this pilot project within one month of the presentation of this Report.

42. The Committee note that at present medicines are available to veterans from Polyclinics. Option of reimbursement for specific limited condition is also available in ECHS. ECHS Polyclinics get their supply of medicines from Armed Forces

Medical Stores Depots (Essential Drug List), Senior Executive Medical Officers (Other than EOL) and limited local purchase. The Ministry is of the opinion that CGHS has a better medicine supply system by adopting the concept of Authorised Local Chemist (ALC) in addition to Central procurement and the proposal for adopting same methodology is under consideration. The concept of ALC entails that chemists are empanelled locally by means of tender enquiry and Polyclinics indent the medicines not available from these ALCs for issue to beneficiaries. The Committee would support the Ministry in any effort for welfare of those who make or are ready to make the supreme sacrifice for our country. Hence, they would like a status report at the earliest on the proposal for adoption of the concept of Authorised Local Chemist in ECHS.

43. The Committee note that a Comprehensive Policy on Procedure for Procurement of Drugs and Consumables for ECHS was issued by Government of India/Ministry of Defence on 25 November, 2003. At present, the financial limits per month, for local purchase of emergent, life saving and essential drugs, of Type A and B Non Military Polyclinics and Military Polyclinics without service Hospitals is Rs. 50,000 and that of Type C and D Non Military Polyclinics and Military Polyclinics without service hospitals is Rs. 30,000. The Committee are concerned to note that even after lapse of 13 years the above mentioned Financial limits have not been reviewed despite the matter being brought into the notice of the Ministry of Defence by the ECHS. Presently, on exhausting this monthly ceiling by Polyclinic, incidence for additional need arising in that month for procurement of emergent, lifesaving and essential drug in not addressed. Therefore, the Committee are of the strong view that due to growth of this scheme and prevailing inflationary trend there is a need to increase the current monthly ceilings. They also desire the Ministry to look into this matter seriously and revise the present ceiling in order to facilitate the officers in charge of Polyclinics to purchase the emergent, life saving and essential drugs.

DIRECTORATE GENERAL QUALITY ASSURANCE

44. Directorate General of Quality Assurance (DGQA) provides Quality Assurance (QA) cover for the entire range of Arms, Ammunitions, Equipments and Stores supplied to Armed Forces. The organisation is also responsible for import substitution and associates with Defence Research and Development Organisation (DRDO) in the development projects. It also ensures Documentation, Codification

and Standardisation Action for minimizing the variety of components / equipments. The other services rendered are promotion of small scale industries, Post Procurement Services, Defect Investigations. During the oral deposition, it was stated that DGQA also provided test facilities for various manufacturers, including private manufacturers, on payment basis.

45. The Committee note that for the year 2016-17, DGQA has been allocated Rs. 1,075.37 crore against the projection of Rs. 1,099.99 crore. However, when asked if any compromises had been made or are likely to be made due to reduced budgetary allocation against the projections made by the DGQA, it replied in negative. The Committee also note that DGQA carries out inspection of defence stores supplied by Ordnance Factories, DPSUs, Trade Firms and ex-import. These inspections are done at various stages of manufacture and at Final Acceptance stage. On an average, DGQA carries out approx. 18,000 inspections per month. Further, whenever a new system is inducted into the Army, DGQA is an integral part of the process and plays a pivotal role in all stages of induction right from the General Staff Qualitative Requirement (GSQR) formulation stage till the Joint Receipt Inspection of the store. Since DGQA seems to be satisfied with its budgetary allocation, the Committee hope that DGQA would continue in their efforts in taking all actions necessary to ensure that the Arms, Ammunitions, Equipments and Stores being inducted in the Armed forces are superlative in quality and highly reliable in war/warlike situations.

46. The Committee note that DGQA suffered deficiency in manpower because of various cuts during initial stages and recruitment ban, especially in group 'C' and 'D' posts. As per the submission of the Ministry, the ban has been lifted and the process of recruitment has started. The Committee hope that the recent recruitment undertaken by DGQA addresses the problem of shortage of manpower adequately and they be apprised of the tangible outcome thereof.

47. The oral deposition of the Defence Secretary before the Committee indicated a paradigm shift being planned in the role of DGQA from quality assuring and managing to audit the system. The Committee would like to have a detailed note from the Ministry on this perceived policy change for DGQA.

NATIONAL CADET CORPS

48. The Committee note that during the year 2011-12, NCC was allocated Rs. 984.01 crore, however, the actuals were Rs. 713.81 crore; during the year 2012-13, NCC was allocated Rs. 1,128.80 crore, however, the actuals were Rs. 791.87 crore; during the year 2013-14, NCC was allocated Rs. 887.12 crore, however, the actuals were Rs. 874.03 crore. During the year 2014-15, NCC had been allocated Rs. 1,025.17 crore, however, actuals were 965.84 crore. During the year 2015-16, NCC had been allocated Rs. 1,021.39 crore, however, actuals were 950.15 crore till January 2016. For 2016-17, funds allocated to NCC are Rs. 1,188.23 crore and Rs. 1.15 crore for Revenue and Capital segments, respectively. The Committee's scrutiny of the above data revealed that NCC has been guilty of underspending every year. Therefore, the Committee desire that the Ministry and NCC Directorate should introspect on this trend and prepare the NCC budget based on realistic and achievable targets.

49. National Cadet Corps (NCC) was established under the NCC Act, 1948. Today it has presence in 670 districts of the country with authorised cadet strength of 15 lakh. NCC aims at creating a pool of organized, trained and motivated youth with leadership qualities in all walks of life, so that they become useful citizens and serve the Nation with all their might regardless of the career they choose. According to the data furnished by the Ministry, the total number of educational institutions at present covered by NCC is 10372 Schools and 5444 Colleges. In all, 4893 schools and 2966 colleges are presently waitlisted. The ongoing Expansion Plan is likely to be completed by 2018-19 and would reduce the current waiting list marginally as this expansion is based on priorities laid down by the Government.

50. The Committee are of the view that at this time when our Defence Services are confronting the problem of shortage of personnel and staff, inducting more schools and colleges into NCC, an institution aiming at developing character, comradeship, discipline, a secular outlook, the spirit of adventure and ideals of selfless service amongst young citizens, is crying need of the hour. Therefore, the Committee recommend that the expansion plan of the NCC be extended and adequate budgetary and logistic support from the Ministry be proved. The Committee may be apprised of the steps taken in this regard. They also desire that the State

Governments should encourage NCC in their respective States and extend resources in this regard.

New Delhi
29 April, 2016
09 Vaisakha, 1938 (Saka)

MAJ GEN B C KHANDURI, AVSM (RETD)
Chairperson
Standing Committee on Defence

Annexure "A"

Details of major ongoing projects (Cost above Rs. 100 Cr) with name of project, developing agency/lab, date of sanction, original estimated cost, likely date of completion, revised cost and revised date of completion of the project.

S. No.	Project Name	Developing Agency/Lab	Date of Sanction	Original Estimated Cost (Rs. in Cr)	Revised Cost (Rs. in Cr)	Original Likely Date of Completion	Revised Date of Completion	Expenditure Till Date (Rs. in Cr)
1	Medium Range Surface-to-Air Missile (MRSAM)	RCI	Feb 2009	10075.68	No revision	Aug 2016	No revision	424.24
2	Light Combat Aircraft (LCA) : Phase-II	ADA	Nov 2001	3301.78	6066.43	Dec 2008	Dec 2015*	5479.64
3	Airborne Warning & Control System (India) AWACS(I) : Phase I *(In principle sanctioned)*	CABS	Feb 2013	No revision	5113.00	Feb 2020	No revision	01.96
4	Kaveri Engine	GTRE	Mar 1989	382.81	2839.00	Dec 1996	Dec 2009*	2044.04
5	Long Range Surface-to-Air Missile (LRSAM)	DRDL	Dec 2005	2606.02	No revision	May 2012	Jun 2016	526.39
6	Light Combat Aircraft (LCA) : Phase-III	ADA	Nov 2009	2431.55	No revision	Dec 2018	No revision	999.24
7	Airborne Early Warning & Control (AEW&C) System	CABS	Oct 2004	1800.00	2402.00	Apr 2011	Jun 2016	2017.17
8	Naval Light Combat Aircraft (LCA Navy Phase-II)	ADA	Dec 2009	1921.11	No revision	Dec 2018	No revision	426.85
9	Naval Light Combat Aircraft (LCA Navy Phase-I)	ADA	Mar 2003	948.90	2103.21	Mar 2010	Dec 2014*	1501.33
10	Medium Altitude Long Endurance(MALE) Unmanned Aerial Vehicle (UAV) and Development of Aeronautical Test Range (ATR) at Chitradurga	ADE	Feb 2011	1540.74	No revision	Aug 2016	No revision	223.16

11	Air-to-Air Missile System 'Astra`	DRDL	Mar 2004	955.00	No revision	Feb 2013	Aug 2016	439.45
12	Nirbhay - Development & Flight Trials	ADE	Dec 2010	56.93	102.28	May 2013	Dec 2016	23.28
13	Quick Reaction Surface-to-Air Missile (QR-SAM)	DRDL	Jul 2014	476.43	No revision	Jul 2017	No revision	04.43
14	National Open Air Range	DLRL	Aug 2014	468.00	No revision	Feb 2018	No revision	00.88
15	Active Electronically Scanned Array Radar	LRDE	Jan 2012	459.65	No revision	Jul 2016	No revision	39.08
16	Kautilya	RCI	Jul 2012	432.80	487.80	Jul 2017	No revision	123.64
17	Development of 1500 hp Engine	CVRDE	Dec 2013	398.02	No revision	Dec 2018	No revision	00.01
18	Solid Fuel Ducted Rocket Ramjet Technology for Air Launched Tactical Missiles (SFDR)	DRDL	Feb 2013	366.00	No revision	Feb 2018	No revision	116.50
19	Hypersonic Wind Tunnel (HWT)	DRDL	Oct 2010	412.00	No revision	Oct 2015	Oct 2019	76.05
20	EW Systems for Capital Ships, Aircrafts & Helicopter of Indian Navy `Samudrika`	DLRL	Jul 2012	342.29	No revision	Jul 2017	No revision	33.91
21	New Generation Anti Radiation Missile (NGARM)	DRDL	Dec 2012	317.20	No revision	Dec 2017	No revision	30.04
22	Post Development Support of AEW&C System (PDSAS)	CABS	Sep 2013	314.32	No revision	Sep 2018	No revision	45.46
23	EW Suite for Fighter Aircraft (EWSFA)	DARE	Sep 2005	279.62	330.31	Mar 2013	Under closure	262.33
24	NBC Defence Technologies	DRDE	Mar 2010	284.96	181.65	Mar 2015	No revision	120.76
25	Dual Colour Missile Approach Warning System	DARE	Nov 2008	228.80	273.80	Jun 2013	Jun 2015**	199.75

26	AIP System on P-75 Submarines and Development of Deliverable LOX system	NMRL	Jun 2014	270.00	No revision	Jun 2017	No revision	17.57
27	D-Jag System Internal RWJ System for Jaguar DARIN III Upgrade Aircraft	DARE	Aug 2012	268.27	No revision	Jun 2015	Jun 2016	20.81
28	Low Vulnerable High Performance Propellant with Low Temperature Co-efficient and Improved Shelf Life of Ammunition	HEMRL	Sep 2014	267.02	No revision	Mar 2018	No revision	01.08
29	155 mm/ 52 Caliber Advanced Towed Artillery Gun System (ATAGS)	ARDE	Sep 2012	247.90	No revision	Sep 2015	Mar 2017	25.81
30	Land Based Prototype for AIP	NMRL	Aug 2010	216.60	No revision	Feb 2015	Mar 2016	121.00
31	40 GHz Upgradation of MMIC Facility	SSPL	Feb 2012	198.72	208.98	Aug 2015	Sep 2017	165.50
32	Advanced Light Weight Torpedo	NSTL	Feb 2008	194.53	No revision	Aug 2013	Dec 2017	73.80
34	Flying Test Bed	LRDE	Sep 2012	173.48	No revision	Sep 2017	No revision	97.21
35	D-29 System (Internal EW system for MiG-29 Upgrade Aircraft)	DARE	Mar 2010	168.85	No revision	Dec 2012	Dec 2015*	95.50
36	Submarine Periscope	IRDE	Mar 2014	163.77	No revision	Mar 2019	No revision	00.35
37	DMR-249 Grade Steels, Plates, Bulb Bars and Weld Consumables	DMRL	Dec 2012	159.30	No revision	Dec 2016	No revision	36.51
38	Consultancy for AB3 Steel and Establishment of Indigenous Production	DMRL	Jan 2013	148.50	No revision	Jan 2016	No revision	54.57
39	Sea keeping and Manoeuvering	NSTL	Sep	84.00	168.58	Sep 2011	Jun	

	Basin (SMB)		**2007**				**2015****	**76.46**
40	**Development of Multi KW Fibre Laser**	**LASTEC**	**Mar 2015**	**289.55**	**No revision**	**Nov 2020**	**No revision**	**00.00**
41	**Instrumented Airborne Platform for Real-time Snow Cover, Avalanche and Glacier Monitoring**	**SASE**	**Sep 2011**	**125.94**	**No revision**	**Sep 2016**	**No revision**	**00.47**
42	**Augmentation of Environmental Test Facility for warheads and Electronic System**	**TBRL**	**Sep 2013**	**121.17**	**No revision**	**Oct 2018**	**No revision**	**01.59**
43	**Advance Light Towed Array 1Sonar (ALTAS)**	**NPOL**	**Apr 2012**	**114.42**	**No revision**	**Apr 2016**	**No revision**	**31.90**
44	**Tech Dev for Engine Fuel Control System**	**GTRE**	**Oct 2014**	**177.72**	**No revision**	**April 2021**	**No revision**	**00.83**
45	**Project Pralay**	**RCI**	**Mar 2015**	**332.88**	**No revision**	**Mar 2018**	**No revision**	**00.34**

***Under Revision ** Under Closure**

Annexure"B"

Details of major projects (Cost more than Rs. 100 Cr) sanctioned during 11th FYP (01 Apr 2007 – 31 Mar 2012)

S.No	Project	Date of Sanction	Sanctioned Cost (Rs in Cr.)	Status
1	Medium Range Surface to Air missile (MRSAM) System for Indian Air Force	Feb 2009	10075.68	Ongoing
2	Light Combat Aircraft (LCA)Development Programme : Phase-III	Nov 2009	2431.55	Ongoing
3	Naval Light Combat Aircraft (LCA-Navy Phase-II)	Dec 2009	1921.11	Ongoing
4	Medium Altitude Long Endurance (MALE) Unmanned Aerial Vehicle (UAV) code named Rustom and Development of Aeronautical Test Range (ATR) at Chitradurga(Rustom-II)	Feb 2011	1540.74	Ongoing
5	Active Electronically Scanned Array Radar	Jan 2012	459.65	Ongoing
6	Hypersonic Wind Tunnel(HWT)	Oct 2010	412.00	Ongoing
7	NBC Defence Technologies	Mar 2010	181.65	Under Closure
8	Dual Colour Missile Approach Warning System For Fighter Aircraft	Nov 2008	273.80	Under Closure

S.No	Project	Date of Sanction	Sanctioned Cost (Rs in Cr.)	Status
9	Land Based Prototype for AIP	Aug 2010	216.60	Under Evaluation
10	40 GHz Upgradation of MMIC Facility	Feb 2012	208.98	Ongoing
11	Advanced Light Weight Torpedo	Feb 2008	194.53	Ongoing
12	Multi Mission Radar	Feb 2012	193.44	Short Closure
13	D-29 System (Internal EW system for MIG-29 Upgrade Aircraft)	Mar 2010	168.85	Under Evaluation
14	Seakeeping and Manoeuvring Basin (SMB)	Sep 2007	168.58	Under Closure
15	Medium Power Radar (MPR) for IAF	Nov 2008	134.14	Under Evaluation
16	Instrumented Airborne Platform for Real-time snow cover,avalanche and glacier monitoring	Sep 2011	125.94	Ongoing
17	Nirbhay- Development Flight Trials	Dec 2010	102.28	Ongoing

Details of major projects (Cost more than Rs. 100 Cr) sanctioned during 12th FYP (01 Apr 2012 – Till 25 Feb 2016)

S.No	Project	Date of Sanction	Sanctioned Cost (Rs in Cr.)	Status
1	National Open Air Range	Aug 2014	468.00	Ongoing
2	Quick reaction surface to air missile (QR-SAM)	Jul 2014	476.43	Ongoing
3	Kautilya	Jul 2012	432.80	Ongoing
4	Development of 1500 hp Engine	Dec 2013	398.02	Ongoing
5	Solid Fuel Ducted Rocket Ramjet Technology for Air Launched Tactical Missiles (SFDR)	Feb 2013	366.00	Ongoing
6	EW Systems for Capital Ships,Aircrafts & Helicopter of Indian Navy titled as 'Samudrika'	Jul 2012	342.29	Ongoing

7	**New Generation Anti Radiation Missile (NGARM)**	**Dec 2012**	**317.20**	**Ongoing**
8	**Post Development Support of AEW&C System**	**Sep 2013**	**314.32**	**Ongoing**
9	**System definition & engineering of DRDO AIP system on P-75 submarines and development of deliverable lox system**	**Jun 2014**	**270.00**	**Ongoing**
10	**D-Jag System Internal RWJ System for Jaguar DARIN III Upgrade Aircraft**	**Aug 2012**	**268.27**	**Ongoing**
11	**155 mm / 52 Caliber Advanced Towed Artillery Gun System (ATAGS)**	**Sep 2012**	**247.90**	**Ongoing**
12	**DRDO - Flying Test Bed**	**Sep 2012**	**173.48**	**Ongoing**
13	**Submarine Periscope**	**Mar 2014**	**163.77**	**Ongoing**
14	**Qualification and Certification of DMR-249 Grade Steels, Plates, Bulb Bars and Weld Consumables**	**Dec 2012**	**159.30**	**Ongoing**
15	**Consultancy for AB3 Steel and Establishment of Indigenous Production**	**Jan 2013**	**148.50**	**Ongoing**
16	**Augmentation of Environmental Test Facility for warheads and Electronic System**	**Sep 2013**	**121.17**	**Ongoing**
17	**Advance Light Towed Array Sonar -ALTAS**	**Apr 2012**	**114.42**	**Under Evaluation**
18	**Technology Development of Engine Fuel Control System (EFSC)**	**Oct 2014**	**177.72**	**Ongoing**
19	**Collaborative Development of Low Vulnerable High Performance Propellant with Low Temperature Coefficient and Improved Life of Ammunition**	**Sep 2014**	**267.02**	**Ongoing**
20	**Project Pralay**	**Mar 2015**	**332.88**	**Ongoing**
21	**Development of Multi-kilowatt Fibre Laser**	**May 2015**	**289.55**	**Ongoing**

ANNEXURE 'C'

Technology Transfer to Industry

S.No	ToT Recipient Industry	Technology Transferred	Developed by (Lab)
1.	M/s Rail Tech, 5625, Qutab Road, New Delhi -110 055.	Railway Biodigester	DRDE
2.	M/s CTS Management Services P. Ltd., E-52, Second Floor, Sector-03, Noida (UP)	Railway Biodigester	DRDE
3.	M/s Daulat Ram Industries, 10-E, Industrial Area, Govindpura, Bhopal – 462 023.	Railway Biodigester	DRDE
4.	M/s Faiveley Transport India Limited, P.B. No. 39, Harita,Horita, Hosur – 635 109	Railway Biodigester	DRDE
5.	M/s Rail Coach Engrs., Outside Octroi Post, PO SheikhpurDistt.: Kapurthala	Railway Biodigester	DRDE
6.	M/s. Rail Tech, 5625, Qutab Road, New Delhi – 110 055	Railway Biodigester	DRDE
7.	M/s Darshan Enterprises, 38-39, DSIDC Complex, Scheme-III, Okhla Industrial Area, Phase-III, New Delhi - 110 020.	Railway Biodigester	DRDE
8.	M/s. Desai Brothers Ltd., (Food Division), 'Desai House', 177/2, Dhole Patil Road, Pune	Retort Pouch Processed Foods	DFRL
9.	M/s. Mamatha Foods Speciality, 331, 19th Main, Nandini Layout, Bangalore	Vegetable Juices	DFRL
10.	M/s. Viraj Clean Sea Enterprises Pvt Ltd, D-440, 2nd Floor, Vashi Plaza, Sector – 17, Vashi, Navi Mumbai –400 70?.	Bioemlsifier	NMRL
11.	M/s. Basaveshwara Enterprises, 864, 9th Main, 2nd Stage, VinayaMarga, Siddarthanagar, Mysore – 570 011	Aloe Vera Beverages	DFRL
12.	M/s. Biotech International Ltd., Vipps Centre, 2, Local Shopping Centre, Block – EFGH, Masjid Moth, Greater Kailash-II, New Delhi – 110 048	CordycepesSinesis	DIBER
13.	M/s. Kamadhenu Co-operative Dairy & Fruit Processing Society Ltd, Golikatta, P.O.	Hurdle Technology Preserved	DFRL

S.No	ToT Recipient Industry	Technology Transferred	Developed by (Lab)
	Onikeri – 581 318, Sirsi TQ, Uttara Kannada	Fruits	
14.	M/s Sargam Metals Pvt Ltd.,No.2 Ramavaram Road, Manapakkam, Chennai	Active Shaft Grounding System	NMRL
15.	M/s. Setco Chemical (I) Pvt. Ltd,S.No. 72, Nos 64 to 73, Dewan& Shah Industrial Estate, WalivPhata, Vasai (East). Dist Thane – 401 208	Epoxy Putty	NMRL
16.	M/s. Setco Chemical (I) Pvt. Ltd,S.No. 72, Nos 64 to 73, Dewan& Shah Induatrial Estate WalivPhata, Vasai (East). Dist Thane – 401 208	Poly oxy Propylene Triol	NMRL
17.	M/s. Biotech International Ltd., B-21, Site C, Surajpur,Greater Noida, U.P.-201306	Bio-larvacide Bacillus Sphaericus DRLT-138	DRL
18.	M/s. Shrinathji Chemicals, 97-A Sector, Industrial Estate, Mandideep 462 046, District Raisen (M.P.)	Bio-larvacide Bacillus Sphaericus DRLT-138	DRL
19.	M/s. Biotech International Ltd., B-21, Site C, Surajpur, Greater Noida,U.P.-201306	Herbal Floor Cleaner	DRL
20.	M/s. Shrinathji Chemicals, 97-A Sector, Industrial Estate, Mandideep, District Raisen	Herbal Floor Cleaner	DRL
21.	M/s. Biotech International Ltd., B-21, Site C, Surajpur, Greater Noida, U.P.-201306	Herbal Mosquito Larvicidal Floating Tablet	DRL
22.	M/s. Shrinathji Chemicals, 97-A Sector, Industrial Estate, Mandideep, District Raisen	Herbal Mosquito Repellant Vaporizer	DRL
23.	M/s. Biotech International Ltd., B-21, Site C, Surajpur, Greater Noida, U.P.-201306	Herbal Mosquito Repellent Vaporizer	DRL
24.	M/s. Biotech International Ltd., B-21, Site C, Surajpur, Greater Noida, U.P.-201306	Larvical Floating Tablet	DRL
25.	M/s. Biotech International Ltd., B-21, Site C, Surajpur, Greater Noida, U.P.-201306	Room Freshener cum Mosquito Repellent	DRL
26.	M/s. Shrinathji Chemicals, 97-A Sector, Industrial Estate,Mandideep, District Raisen	Room Freshener cum Mosquito	DRL

S.No	ToT Recipient Industry	Technology Transferred	Developed by (Lab)
		Repellent	
27.	M/s. Shrinathji Chemicals, 97-A Sector, Industrial Estate, Mandideep, District Raisen	Water Testing Field Kit	DRL
28.	M/s. Aloe Naturals, 29(1), Light Industrial Area, Jodhpur-342003	Stuffed Parathas& Long Term Chapaties	DFRL
29.	M/s Next Millenium, E-153, Greater Kailash, Part – II , New Delhi-110048	Aircrew Survival Jacket	DEBEL
30.	M/s Aeronav Industrial Safety Appliances, E-24, Sector VII, Noida-201301, U.P	Aircrew Survival Jacket	DEBEL
31.	M/s Aeronav Industrial Safety Appliances, E-24, Sector VII, Noida-201301, U.P	FR Anti G Suit	DEBEL
32.	M/s Aeronav Industrial Safety Appliances, E-24, Sector VII, Noida-201301, U.P	FR Gloves	DEBEL
33.	M/s Next Millenium, E-153, Greater Kailash, Part – II , New Delhi-110048	FR Gloves	DEBEL
34.	M/s Next Millenium, E-153, Greater Kailash, Part – II, New Delhi-110048	FR Overalls	DEBEL
35.	M/s Aeronav Industrial Safety Appliances, E-24, Sector VII, Noida-201301, U.P	FR Overalls	DEBEL
36.	M/s. Tan Enterprises, 397, GF, Masjid Moth, South Extn. Part II, New Delhi – 110 049	Hawk Mask	DEBEL
37.	M/s. MuraliEngg. & Press Metals, # 145, 11th Main, 12th Cross Malleswaram, Bangalore	Hawk Mask	DEBEL
38.	M/s Vijay Sabre Pvt. Ltd., 35,Chandivali Village, PO Bax 8960, Mumbai-400 072	Helicopter Oxygen System	DEBEL
39.	M/s. Surya Aerotech Industries,Plot No. 130, Sector 3, IMT Mamesar 122 050 Gurgaon	Helicopter Oxygen System	DEBEL
40.	M/s. Tan Enterprises, 397, GF, Masjid Moth, South Extn. Part II, New Delhi – 110 049	Aircrew Survival Jacket	DEBEL
41.	M/s. Tan Enterprises, 397, GF, Masjid Moth, South Extn. Part II, New Delhi – 110 049	Flame Retardant Gloves	DEBEL
42.	M/s. Tan Enterprises, 397, GF, Masjid Moth, South Extn. Part II, New Delhi – 110 049	Flame Retardant Overall	DEBEL
43.	M/s. Tan Enterprises, 397, GF, Masjid Moth, South Extn. Part II, New Delhi – 110 049	Helicopter Oxygen System	DEBEL

S.No	ToT Recipient Industry	Technology Transferred	Developed by (Lab)
44.	M/s. Tan Enterprises, 397, GF Masjid Moth, South Extn. Part II, New Delhi – 110 049	Light Weight Integrated HAWK Helmet	DEBEL
45.	M/s. PKM Fine Foods, Kottoor, Kolenchery, P.O., 682311, Ernakulam (Distt), Kerala State	Retort Pouch Processed Foods	DFRL
46.	M/s. Tan Enterprises, 397, GF, Masjid Moth, South Extn. Part II, New Delhi – 110 049	CFF DDOR	DEBEL
47.	M/s. Shakti Enteprise, 125, Industrial Area, Sction-6, Faridabad-121 006	CFF Helmet	DEBEL
48.	M/s. Tan Enterprises, 397, GF, Masjid Moth, South Extn. Part II, New Delhi – 110 049	CFF Helmet	DEBEL
49.	M/s. Shakti Enteprise, 125, Industrial Area, Sction-6, Faridabad-121 006	CFF Mask	DEBEL
50.	M/s. Tan Enterprises, 397, GF Masjid Moth, South Extn. Part II, New Delhi – 110 049	CFF Mask	DEBEL
51.	M/s. United Rubber Industries (I) Pvt..Ltd, Jay Vailankani Industrial Estate, Mumbai	CFF Mask	DEBEL
52.	M/s. Dass Hitachi Ltd, 8/9th Milestone, G.T. Road, Sahibabad P.O. Mohan Nagar, Ghaziabad	Railway Biodigester	DRDE
53.	M/s Tagros Chemicals India Pvt. Ltd., "Jhaver Centre", Rajah Annamalai, Building, IV Floor, 72, Marshalls Road, Egmore, Chennai – 600 008	Depa – Spray, Cream & Technical	DRDE
54.	M/s Sidwal Refrigeration Ind. Ltd., 108-A, Madangir, New Delhi - 62	Railway Biodigester	DRDE
55.	M/s Saranya Electronics Ltd.PlotNo.A-7/1 2nd Floor,Electronics Complex, Kushalguda, Hyderabad – 500 062.	Railway Biodigester	DRDE
56.	M/s. Sidwal Refrigeration Industries Ltd.,108-A, Madangir New Delhi – 110 062	Railway Biodigester	DRDE
57.	M/s Plastic Surge Industries Pvt. Ltd., SiddharthBhawan, S. V. Patel Marg, Post Box No. 095, Morshi Road, Amravati – 444 601(MS)	Water Poison Detection Kit (WPDK)	DRDE
58.	M/s Indian Medicinal Pharmaceutical Corporation (IMPCL), Ramgarh, Uttrakhand	Herbal Antioxidant Supplement	DIHAR

S.No	ToT Recipient Industry	Technology Transferred	Developed by (Lab)
59.	M/s. Shrinathji Chemicals, 97-A Sector, Industrial Estate, Mandeep, District Raisen (M.P.)	Herbal Mosquito Repellent Vaporizer	DRDE
60.	M/s. Andhra Pradesh Foods (A Govt. of A.P. Enterprises), IDA, Nacharam, Hyderabad-	Chikki	DFRL
61.	M/s. Kohinoor Foods Limited (Formerly Satnam Overseas Ltd), 201, Vipps Centre, Masjid Moth, Greater Kailash-II, New Delhi – 110 048	Retort Pouch Processed Foods	DFRL
62.	M/s Jyothy Lab. Ltd., Ujala House, RK Mandir Road, Kondivita, Andheri (E), Mumbai	DEPA Technical, DEPA Cream and DEPA Spray	DRDE
63.	M/s. Thermopads Pvt., Ltd., 28, Nagarjuna Hills, Punjagutta, Hyderabad – 500 082	Heated Shoe Insoles for use with Boot Furline High Altitude	DEBEL
64.	M/s Bigtech Pvt. Ltd., II Floor, SID Entrepreneurship Centre, IISc Campus, Bangalore	H1N1 Lamp Assay	DRDE
65.	M/s. Superior Fabrics, 21, Shri Ram Road, Civil Lines, Delhi - 54	FR Air Crew Survival Jacket	DEBEL
66.	M/s. Superior Fabrics, 21, Shri Ram Road, Civil Lines, Delhi - 54	FR Anti G Suit	DEBEL
67.	M/s. Superior Fabrics, 21, Shri Ram Road, Civil Lines, Delhi - 54	FR Gloves	DEBEL
68.	M/s. Superior Fabrics, 21, Shri Ram Road, Civil Lines, Delhi - 54	FR Overalls	DEBEL
69.	M/s. B.S. SudarshanRao, 48, 2nd Cross, 9th Main, N.T.I. Layou, Vidyaranyapura, Bangalore – 560 097	Puff & Serve Chapatis	DFRL
70.	M/s Safire Polymers Ltd, C-49/B, Mahendru Enclave, Delhi - 110033	Retort Pouch Processes Foods & Long Term Preserved Chapati	DFRL
71.	M/s ArnafFutristic Technologies(P) Ltd., H-43, Connaught Cirus, New Delhi - 110001	FR Overalls	DEBEL
72.	M/s Jain Irrigation Systems Ltd., Jain Food Park, Jain Valley, PO Box 20, Jalgaon	Minimally processed	DFRL

S.No	ToT Recipient Industry	Technology Transferred	Developed by (Lab)
		vegetables	
73.	M/s Asian Herbex Ltd., #5 Prembagh, 3-4-490/A, Barkatpura, Hyderabad 500-027.	DEPA Technical	DRDE
74.	M/s Vantage Integrated Security Solutions Pvt Ltd , Delhi	Explosive Detection Kit	HEMRL
75.	M/s MGM Associates, New Delhi	HAPO Chamber	DEBEL
76.	M/s Jyothy Laboratories Limited	Woolcare	DRDE
77.	M/s Meenakshi Hotels Pvt. Ltd., 113-114, Alagarkoli Road, K Pudur, Madurai - 625 007	Retort Pouch Processd Food	DFRL
78.	M/s Kalpatharu, U-76, Hootagalli Industrial Area, Mysore- 570 018	Holybite& Energy Capsule	DFRL
79.	M/s Hallimane Caterers, 3/144(Old No. 1), Coconut Avenue Road, 7th Cross, Malleshwaram, Bangalore- 560003	Short Term Preserved Chapatis	DFRL
80.	M/s Aeronav Industrial Safety Appliances, E-24, Sector VII, Noida-201301, U.P	Upgraded Arctic gloves with Active Heating Element	DEBEL
81.	M/s Indotech Group, C-8/8490, VasantKunj, New Delhi- 110070	Flame Retardant Overall	DEBEL
82.	M/s Frontier Textiles Pvt. Ltd., 40/3, MadanBiswas Lane, Salkia, P.S Golabari, District Howrah - 711 106, India	FR Flying Overall	DEBEL
83.	M/s Dynalog (I) Ltd., Corporate Plaza,SB Road, Shivajinagar, Pune 411 016	LSP of ROV 'DAKSH' Project No. LSP-09/RDE-408	R&DE(E)
84.	M/s Estelar Foods Pvt. Ltd., A1/172, Safdarjung Enclave, New Delhi- 110029	Stuffed Paranthas	DFRL
85.	M/s.Andhra Polymers Pvt. Ltd,Span Solitaire, 6-3-1090/B/5, Raj Bhavan Road, Hyderabad- 500 082	Acoustic rubber tiles 20mm	NMRL
86.	M/s Arnaf Futuristic Technologies(P) Ltd., H-43, Connaught Cirus, New Delhi -110001	Aircrew Survival Jacket	DEBEL

S.No	ToT Recipient Industry	Technology Transferred	Developed by (Lab)
87.	M/s Theta Controls, 1, Electronic Estate, Pune Satara Road, Pune 411 009	LSP of ROV 'DAKSH' Project No. LSP-09/RDE-408	R&DE(E)
88.	M/s Bharat Electronics Ltd, NDA Road, Pashan, Pune 411 021	LSP of ROV 'DAKSH' Project No. LSP-09/RDE-408	R&DE(E)
89.	M/s ThermopadsPvt Ltd, No. 28, Nagarjuna Hills , Punjagutta, Hyderabad - 500082	Electrically heated Gloves with active heating elements	DEBEL
90.	M/s Sovereign PharmaPvt Ltd, SaroshBhawan, 16-B/1, DrAmbedkar Road, Pune-411001	Pralidoxime Chloride and Atropine Sulphate Injections in Cartridges	DRDE
91.	M/s Nikhil Nanoceuticals Pvt. Ltd., Plot 12-B, Jai Hind Society, Madhapur , Hyderabad	(a) Seabuckthorn Spices Squash (b) Seabuckthorn Herbal Tea (c) Seabuckthorn Biscuits	DFRL
92.	M/s ArnafFutristic Technologies(P) Ltd., H-43, Connaught Cirus, New Delhi - 110001	Flame Retardant Automatic Inflatable Life Jacket	DEBEL
93.	M/s Feroz Khan, #14, MIG II, KHB Colony, Kalyangiri Nagar, Mysore- 570019	Low Calorie Aloe Vera Beverage	DFRL
94.	M/s Shakti Bhog Snacks Ltd., B-117, Sector- 64, Noida- 201 307	Retort Pouch Processed Technology and shelf stable (No Preservative) Chapaties	DFRL
95.	M/s Aeronav Industrial Safety Appliances, E-24, Sector VII, Noida-201301, U.P	Thermal Drawers	DEBEL
96.	M/s Aeronav Industrial Safety Appliances, E-24, Sector VII, Noida-201301, U.P	Thermal Vest	DEBEL
97.	M/s Aeronav Industrial Safety Appliances, E-24, Sector VII, Noida-201301, U.P	Upgraded Nato Suit	DEBEL
98.	M/s Next Millenium, E-153, Greater Kailash, Part – II, New Delhi-110048	Upgraded Nato Suit	DEBEL

S.No	ToT Recipient Industry	Technology Transferred	Developed by (Lab)
99.	M/s Shrinathji Chemicals, E-4/50, Arera Colony, Bhopal-462016	DS-2	DRDE
100.	M/s System Engineering, Sy.No 107/2, KumbalagoduIndl. Area, KengeriHubali, Bengaluru South, Bengaluru- 560 074	Online conditioner & continuous blancher for vegetables	DFRL
101.	M/s SnehabharatiVivudhodhdheshaSahakaraSamgha Ltd., Kyalanuru, KolarTaluk, Kolar District, Karnataka	(a) Sweetened Millet Mix (b) Spice Millet Mix (c) Millet Sweet cookies (d) Millet Beverage Mix (e) Ash Gourd Juice	DFRL
102.	M/s Gujarat Fluorochemicals Ltd., Noida	Heptafluoropropane (HFC 227ea)	CFEES
103.	M/s. Raksha Polycoats,S-17, 'T' Block, M.I.D.C Bhosari, Pune-411026	Hydro Suit	DEBEL
104.	M/s Kalpatharu, U-76, Hootagalli Industrial Area, Mysore- 570 018, Karnataka	Beetle Leaf Juice	DFRL
105.	M/s. Shakti Enteprise 125, Industrial Area, Sction-6, Faridabad-121 006	Hawk Mask	DEBEL
106.	M/s. Shakti Enteprise 125, Industrial Area, Sction-6, Faridabad-121 006	Light Weight Integrated HAWK Helmet	DEBEL
107.	M/s. NavdeepPvt Ltd,1151, Sector-15 Faridabad-121 007	Light Weight Integrated HAWK Helmet	DEBEL
108.	M/s HES Water Engineers(India) Pvt. Ltd.,K27, Five Star Industrial Zone, MIDC, butibori, Nagpur- 441122	Iron Removal Unit	DRL
109.	M/s PD Scientific Industries Pvt Ltd,C-46, Road No.12, Site V, UdyogKunj, Panki, Kanpur	Iron Removal Unit	DRL
110.	M/s Hill Tribes Mushroom and Poultry Pvt. Ltd., S.P. Colony, Hapoli, Ziro-791120	Mushroom Pickle Technology	DRL

S.No	ToT Recipient Industry	Technology Transferred	Developed by (Lab)
111.	M/s CalcoPolychem Pvt. Ltd, Delhi	Masterbatch of Photo Degradable Plastics - LDPE and LLDPE	CFEES
112.	M/s. Hindustan Metal Industries, Shri Radhesh, Bhawan, Opposite, ShujabadBhawan, Nai Sarak, Gwalior - 474 001	Autoinjector	DRDE
113.	M/s Shrinathji Chemicals, E-4/50, Arera Colony, Bhopal-462016	Autoinjector	DRDE
114.	M/s IsconSurgicals Ltd., B-70, MIA, Phase-II, Basni, Jodhpur –342 005	Autoinjector	DRDE
115.	M/s SRP Adhesives(Pvt) Ltd., Plot No 7, Akrampur, Industrial Estate, Unnao (U.P)	Fluid Engine Starting Aid	DMSRDE
116.	M/s Orion Health Foods Pvt. Ltd., G. S Road, Shillong - 793 001	Instant khichdi Mix	DFRL
117.	M/s Ensigns Healh Care Pvt. Ltd., No. 3, Prachi Residency, Baner, Pune- 411 045	Egg Biscuits	DFRL
118.	M/s QUALPRO Diagnostics (Tulip Group),C2 Gitanjali, Dr. AA RegoBagh, Alto Santacruz, Bambolim Complex, PO Goa – 403 202.	ChikungunyaIgm Elisa Detection Kit	DRDE
119.	M/s QUALPRO Diagnostics (Tulip Group),C2 Gitanjali, Dr. AA RegoBagh, Alto Santacruz, Bambolim Complex, PO Goa – 403 202.	Chikungunya Antigen Elisa Detection Kit	DRDE
120.	M/s QUALPRO Diagnostics (Tulip Group),C2 Gitanjali, Dr. AA RegoBagh, Alto Santacruz, Bambolim Complex, PO Goa – 403 202.	JE Elisa Detection Kit for detection of Japanese Encephalitis Infection	DRDE
121.	M/s Hi-Tech Carbon & Catalyst, Plot-J 405/4 Road No. 4 GIDC,	Polladium Impregnated Carbon	DRDE
122.	M/s Active Char Products P. Ltd., B-No. 615, Industrial Development Area, Binanipuram, Edyar, Ernakulam - 683 502. (Kerala)	Polladium Impregnated Carbon	DRDE
123.	M/s Pushpa Enterprises, A-5/24 PashcimVihar New Delhi – 110 063.	Stationary Biodigester	DRDE
124.	M/s Samudra Shipyard (P) Ltd., PB No. 10 Chemical Industrial Estate,Aroor.(Kerala)	Stationary Biodigester	DRDE

S.No	ToT Recipient Industry	Technology Transferred	Developed by (Lab)
125.	M/s Nucleonix, Hyderabad, Plot No. 162 A & B, Phase -II, I.D.A, Cherlaplly , Hyderabad	ACU	DLJ
126.	M/s Intel Design Systems(India) Pvt. Ltd, 47, Industrial Estate ,Lonavala, Pune-410 401	BCU	DLJ
127.	M/s Intel Design Systems(India) Pvt. Ltd, 47, Industrial Estate, Lonavala, Pune-410 401	Cable Harness of Modernized NBC Protection System of BMP	DLJ
128.	M/s BEL, Pune	Integration of modernized NBC Protection System of BMP-2/2K	DLJ
129.	M/s Nucleonix, Plot No. 162 A & B, Phase -II,I.D.A. Cherlaplly , Hyderabad - 500 051	RADMAC	DLJ
130.	M/s Premier Explosives limited(PEL), Secunderabad	1200CC, 2400CC and 6000CC pellet Type gas generator	HEMRL
131.	M/s Premier Explosives limited(PEL), Secunderabad	SQUIB(Cartridge Electrical) for IFDSS	HEMRL
132.	M/s Raas Life Sciences Pvt Ltd , Plot No. 13, Raghavendra Nagar Nacharam, Hyderabad 500 076 AP. CP: Dr.M.Shesheer Kumar , MD	Swine Flu (H1N1) Detection Kit	DRDE
133.	M/s Crowe & Company, Summerville, South Carolina, USA	Explosive Detection Kit	HEMRL
134.	M/s Yorco Sales Pvt. Ltd, New Delhi	Multi-Purpose Foldable Army Field Cot (MPAFC)	INMAS
135.	M/s Active Char Products P. Ltd., B-No. 615, Industrial Development Area, Binanipuram, Edyar, Ernakulam - 683 502. (Kerala)	Impregnated carbon(Whetlerite)	DRDE
136.	M/s Airflow Equipments (India) P. Ltd., 9 ChellaiammanKoil Street Chennai-600117	Railway Biodigester	DRDE
137.	M/s Anjana Steel Industries Pvt., Ltd.,Dhirganga More, NH-2 Delhi Road, Baidyabati, Distt.-Hoogly (WB)	Railway Biodigester	DRDE

S.No	ToT Recipient Industry	Technology Transferred	Developed by (Lab)
138.	M/s E-Pack Polymers, 2584 Rohatgi Mansion, 2nd Floor, Hamilton Road, Delhi.110 006	Stationary Biodigester	DRDE
139.	M/s Shri Ram Raja Wood Packers, 905-906, Silver, Estate, University Road, Gwalior	Stationary Biodigester	DRDE
140.	M/s Go Green Solution Pvt., Ltd., 1, Samarth Nagar (w), Ajni Sq., Wardha Road, Nagpur	Stationary Biodigetser	DRDE
141.	M/s Alfa System & Services, E-19-C, Sector 8,Noida- 201301 (UP)	Stationary Biodigetser	DRDE
142.	M/s Anjana Steel Industries Pvt., Ltd.,Dhirganga More, NH-2 Delhi Road, Baidyabati, Distt.-Hoogly (WB)	Stationary Biodigetser	DRDE
143.	M/s Idea Forge Techology P Ltd., Off. # 4, 4th floor KReSIT BL, IIT Bombay, Powai, Bombay 400 076	UAV 'NETRA' Project No.TD-2010/R&DE (E)/LIC-02	R&DE(E)
144.	M/s Sarazen Research & Development Organisation, Near Transport Nagar, Shankarpur, Gwalior(MP)	CC-2 Suspension	DRDE
145.	M/s Sarazen Research & Development Organisation, Near Transport Nagar, Shankarpur, Gwalior(MP)	CC-2 Suspension	DRDE
146.	M/s Ideaforge Technology Pvt. Ltd, Office No 4, 4th Floor, IIT Bombay, Powai, Mumbai	Ground Control Station for Unmanned Aerial Vehicle	R&DE(E)
147.	M/s Amit Biotech (P) Ltd., Unit No.21 Ballygunj, Circular Road, 3rd Floor ,Kolkata	Long Lasting Insect Mosquito Net(LLIN)	DRDE
148.	M/s Hi-Tech Carbon & Catalyst, Plot J-405/4, Road No. 4, GIDC, Panoli (Guj)- 394 116	Polladium Impregnated Carbon	DRDE
149.	M/s MaanEnviro Technologies, Plot No.38-39 MangalmurtiNaulakha, Square, Nemawar Road, Indore	Stationary Biodigester	DRDE
150.	M/s Rail Tech, 5625, Qutab Road, New Delhi -110 055	Stationary Biodigester	DRDE

S.No	ToT Recipient Industry	Technology Transferred	Developed by (Lab)
151.	M/s Larsen & Toubro Limited, Mumbai, L & T House, N. M Marg, Ballard Estate, Mumbai 400001	Integrated Life Support System(ILSS)	DEBEL
152.	M/s Active Char Products P. Ltd., B-No. 615, Industrial Development Area, Binanipuram, Edyar, Ernakulam - 683 502. (Kerala)	Impregnated Carbon for Air Cleaning Filters for Object	DRDE
153.	M/s GaneshaImpex , 165, Sector-4, IMT Manesar , (Haryana)	Woolcare	DRDE
154.	M/s Gulf oil Corporation Limited, Hyderabad	DAG Primer for MILAN 2T Missile	HEMRL
155.	M/s. Hindustan Metal Industries, Shri RadheshBhawan, Opposite ShujabadBhawan, NaiSarak, Gwalior - 474 001	First Aid Kit CBW	DRDE
156.	M/s GaneshaImpex , 165, Sector-4, IMT Manesar , (Haryana)	Long Lasting Insect Mosquito Net(LLIN)	DRDE
157.	M/s Hindustan Metal Industries, Shri RadheshBhawan, Opposite ShujabadBhawan, NaiSarak, Gwalior - 474 001.	Personal Decontamination Kit (PDK) & Three Colour Detector Paper (TCD)	DRDE
158.	M/s SB Equipments, 309, Durga Chambers, 1333 D.B. Gupta Road, Karol Bagh, New Delhi	Aeroheal	DRL
159.	M/s SB Equipments, 309, Durga Chambers, 1333 D.B. Gupta Road, Karol Bagh, New Delhi	Aeromos	DRL
160.	M/s SB Equipments, 309, Durga Chambers, 1333 D.B. Gupta Road, Karol Bagh, New Delhi	PainOut	DRL
161.	M/s SB Equipments, 309, Durga Chambers, 1333 D.B. Gupta Road, Karol Bagh, New Delhi	Termiclear	DRL
162.	M/s Biotron Healthcare(India) P. Ltd, Mumbai	Chikungunya - RT Lamp for Detection of Chikungunya Fever	DRDE
163.	M/s Joy Products, 5, Vandana, BapubhaiVashi Road, Vile Parle(W), Mumbai - 400 056	Short Term Preserved Chapatis	DFRL
164.	M/s Percos India Pvt. Ltd. New Delhi	High Altitude Herbal UV	INMAS

S.No	ToT Recipient Industry	Technology Transferred	Developed by (Lab)
208.	M/s BSA Corporation Ltd, Pune, Gat No. 2329, A/1, S.no 279, 281, 287, Wagholi, Pune	Biodigester	DRL
209.	M/s Century Pharmaceuticals Ltd, Vadodara, 406, World Trade Center, Sayagiganj	Biodigester	DRL
210.	M/s Pioneer Polymers Pvt. Ltd. Delhi	Herbal Mosquito Repellant Vaporizer	DRL
211.	M/s I-Chem (India), Delhi	Roachtox&Roachline	DRL
212.	M/s SujayEnvirotech India Private limited, C-480, Sumati Apartment, Near ShaniwarwadaPeth, Pune-30 (Maharashtra), India	Biodigester	DRL
213.	M/s HYT Innovative Projects Pvt. Ltd., Pune, 15, Vishrambaug Housing Society, SenapatiBapat Road, Pune - 411 016	Manufacturing of HEMRIN-EPDM based rocket motor insulation	HEMRL
214.	M/s Waterlife India Private Limited, Plot No 9, SaiNidhi, 2nd Floor, Krishnapuri Colony, West Marredpally, Secunerabad	Mobile RO Water Purification System	DLJ
215.	M/s Mars Equipments Limited, India, 28-A, Vidhan Sabha marg, Burlington Xing, lucknow 226001(U.P), India	Biodigester	DRL
216.	M/s Premier Explosives Ltd, Secunderabad, Premier House, 11, Ishaq Colony Near AOC Centre Secunderabad 500015 AP(India)	Manufacturing of BKNO3 pellets of ME-445 Compostion	HEMRL
217.	Khandelwal Enterprises, Jaipur	Biodigester	DRL
218.	Shree MathaNutrifoods, Hubli, No. 65, Niketan Garden, Behind NWKSRTC, Gokul Road	Millet - Ragi based products	DFRL
219.	M/s Waterlife India Private Limited, Secunerabad	Biodigester	DRL
220.	Ultra Dimensions Pvt Ltd, Vishakhapatnam	Biodigester	DRL

S.No	ToT Recipient Industry	Technology Transferred	Developed by (Lab)
		Screen Product	
165.	M/s ArnafFutristic Technologies(P) Ltd., H-43, Connaught Cirus, New Delhi - 110001	FR Gloves	DEBEL
166.	M/s. Arnaf Futuristic Technologies (P) Ltd., H-43, Connaught Place New Delhi – 110 001	FR Anti G Suit	DEBEL
167.	M/s Banka Enterprises, A-111, Express Apartment, Lakdi-Ka-Pool, Hyderabad – 500 004.	Bio-Digester	DRDE
168.	M/s Dilip Enterprise, Missa, Nagaon, Pin-782138	Biotank	DRL
169.	M/s Singh's Steelwork, Post Box.30, Mission Chariali, Tezpur-784 001	Biotank	DRL
170.	M/s National Associates, 67, Gauhati University Campus, Sundarbari, Jalukbari, Guwahati	Biotank	DRL
171.	M/s Inus, 215, MB Road, Birati, Kolkata -700051	Biotank	DRL
172.	M/s Industrial Services, 93, Dakshindari Road, Kolkata-700048	Biotank	DRL
173.	M/s Buhania Bros.D-56, Sitapuri Part-I, Gali No.18, Near Pankha Road, New Delhi	Biotank	DRL
174.	M/s Adigear International, A-40, Mayapuri Industrial Area, New Delhi -110064	FR Overall	DEBEL
175.	M/s BASICS Ltd. Delhi	Instant Cooking Pulses and dal flakes	DFRL
176.	M/s BASICS Ltd. Delhi	Instant whole pulses and their curries	DFRL
177.	M/s BASICS Ltd. Delhi	Short term preserved chapaties	DFRL
178.	M/s Besco Limited (Foundry Division), 7th Floor, Poonam, 5/2 Russel Street, Kolkata	Biodigester	DRDE
179.	M/s Larsen & Toubro Limited, Mumbai, L & T house, N. M Marg, Ballard Estate, Mumbai-400001	Lakshya-2 APTA(Advanced Pilotless Target Aircraft)	ADE
180.	M/s Vidil Food Products, Mysore	Flax Based Spice Powder	DFRL

S.No	ToT Recipient Industry	Technology Transferred	Developed by (Lab)
181.	M/s V K S Verve Nectors Pvt. Ltd, Kerala	Holibite	DFRL
182.	M/s Vidil Food Products, Mysore	Millet Based Jamun Mix Powder	DFRL
183.	M/s Bush Foods Overseas Pvt. Ltd, Delhi	Ready pouch processed foods	DFRL
184.	M/s Bush Foods Overseas Pvt. Ltd, Delhi	Ready processed Chapaties	DFRL
185.	M/s Hunlang Foods(P) Ltd, Meghalaya	Short Term Preserved Chapaties	DFRL
186.	M/s Inkal ventures Pvt. Ltd, Kerala	Ready Pouch Processed foods	DFRL
187.	M/s Larsen & Toubro Limited, Mumbai, L & T House, N. M Marg, Ballard Estate	Helicopter Oxygen System	DEBEL
188.	M/s. S.S.Rubbers Pvt. Ltd., 5-9-287, R.G. Nagar, I.E.Kukatpally, Balanagar, Hyderabad	20 mm Rubber Tiles	NMRL
189.	M/s. Murugan Enterprises, H 30/32, Ashtalakshmi Garden, Basant Nagar Chennai	20mm Rubber Tiles	NMRL
190.	M/s Reliable Multifood Company, Mumbai, G/10 ParelSivsmurthi CHS Manjrekar Lane Dr. E Moses Road, Worli Mumbai – 400018, Maharashtra India	Instant Ravaldli Mix	DFRL
191.	M/s Reliable Multifood Company, Mumbai, G/10 ParelSivsmurthi CHS Manjrekar Lane Dr. E Moses Road.Worli Mumbai – 400018, Maharashtra India	Instant Upma Mix	DFRL
192.	M/s Dabur	Alocal Cream	DIPAS
193.	M/s Shree Cosmetics	Alocal Cream	DIPAS
194.	M/s MastrosMedilines Systems Limited, Mumbai	Poratable Handheld Physiological vital Parameter Monitor(PPVPM)	DEBEL
195.	M/s Raksha PolycoatsPvt Ltd, Pune	Seaking Float	ADRDE

S.No	ToT Recipient Industry	Technology Transferred	Developed by (Lab)
196.	M/s Arkin Creations Pvt. Ltd., H-127, 1st Floor, Residency Greens, Greenwood City, South City-1, Gurgaon-122001	Bio-Digester	DRDE
197.	M/s Premier Explosives Ltd, Hyderabad	Manufacturing of Fuel Rich Sustainer Grains for Akash Missile	HEMRL
198.	M/s Flower Valley Food, Delhi	Retort Processed Chapaties	DFRL
199.	M/s Sab Foods, Chennai	Appetizer beverage mix-spiced drink mix	DFRL
200.	M/s Sab Foods, Chennai	Chicken Biscuits	DFRL
201.	M/s. Poona Mesuring Tools, 60 East Khadkee, Line Bazar, Near Holkar Bridge, Pune	Manufacturing Process for Peizocomposite Transducer Elements	NMRL
202.	M/s. Allied Industries, Martand, Gandhi Chowk, Kalyan – 421301	Manufacturing Process for Peizocomposite Transducer Elements	NMRL
203.	M/s Real India LifetechPvt ltd, Vasantha Chambers, Pent House, 5-10-173, FtehMaidan Road, Basheerbagh, Hyderabad	Biodigester	DRL
204.	M/s Vibhu Composite Works, Yamuna Nagar	Biodigester	DRL
205.	M/s S V K Green Tech Pvt. Ltd., B-121, Sec-71, Noida-201303, U.P	Biodigester	DRL
206.	M/s Eram Scientific Solutions Pvt. Ltd, TC 9/1615, SRHM Road, Sasthamangalam, Trivandrum-695010	Biodigester	DRL
207.	M/s Srikar Organics India Ltd., Plot No- 24, Near Chandamama Hospital, Raghavendra Nagar, Nacharam, Hyderabad - 500039	Biodigester	DRL
208.	M/s BSA Corporation Ltd, Pune, Gat No. 2329, A/1, S.no 279, 281, 287, Wagholi, Pune	Biodigester	DRL
209.	M/s Century Pharmaceuticals Ltd, Vadodara, 406, World Trade Center, Sayagjiganj	Biodigester	DRL
210.	M/s Pioneer Polymers Pvt. Ltd, Delhi	Herbal Mosquito Repellant Vaporizer	DRL
211.	M/s I-Chem (India), Delhi	Roachtox&Roachline	DRL
212.	M/s SujayEnvirotech India Private limited, C-480, Sumati Apartment, Near ShaniwarwadaPeth, Pune-30 (Maharashtra), India	Biodigester	DRL
213.	M/s HYT Innovative Projects Pvt. Ltd., Pune, 15, Vishrambaug Housing Society, SenapatiBapat Road, Pune - 411 016	Manufacturing of HEMRIN-EPDM based rocket motor insulation	HEMRL
214.	M/s Waterlife India Private Limited, Plot No 9, SaiNidhi, 2nd Floor, Krishnapuri Colony, West Marredpally, Secunerabad	Mobile RO Water Purification System	DLJ
215.	M/s Mars Equipments Limited, India, 28-A, Vidhan Sabha marg, Burlington Xing, lucknow 226001(U.P), India	Biodigester	DRL
216.	M/s Premier Explosives Ltd, Secunderabad, Premier House, 11, Ishaq Colony Near AOC Centre Secunderabad 500015 AP(India)	Manufacturing of BKNO3 pellets of ME-445 Compostion	HEMRL
217.	Khandelwal Enterprises, Jaipur	Biodigester	DRL
218.	Shree MathaNutrifoods, Hubli, No. 65, Niketan Garden, Behind NWKSRTC, Gokul Road	Millet - Ragi based products	DFRL
219.	M/s Waterlife India Private Limited, Secunerabad	Biodigester	DRL
220.	Ultra Dimensions Pvt Ltd, Vishakhapatnam	Biodigester	DRL

S.No	ToT Recipient Industry	Technology Transferred	Developed by (Lab)
221.	M/s MAK India Ltd, 7/41-B, Avinashi Road, Coimbatore-641014	Biodigester	DRL
222.	M/s Alfa Therm Limited, 6, Community Centre, Mayapuri, Phase-I, New Delhi – 110 064.	Plain Bio-Digester	DRL
223.	M/s Bhilai Engineering Corporation Ltd, Hathkoj Village, Industrial Area, Bhilai-490026	Biodigester	DRL
224.	Frontier Sales Corporation, Bamunimaidan Industrial Estate, 1st Bye-Lane, Opp. BhogaliJalpan, Guwahati-781004	Biodigester	DRL
225.	CRPF Ministry of Home Affairs, Government of India, CGO Complex, Block No 1, Lodhi Road, New Delhi - 110003	Baffle Ranges - A smart solution for small arms firing	TBRL
226.	Grandeur Business Solutions Pvt. Ltd., D-228, Sarvodaya Enclave, Near IIT Opposite Mother's International School, New Delhi - 110017	Biodigester	DRL
227.	Chacra Foods, Madurai, No 18 Vallabhbhai Road, Chinn Chokkikulam, Madurai (T.N)	Puff & Serve Chapatis	DFRL
228.	Electron Technologies, Paokkad, 25/ 853 (II), Laksmi Arcade, Mosque Road, Palakkad (Kerala) - 678014	Minimally processed vegetables in precut and packaged form	DFRL
229.	Wahisons Private Limited, D 5 Pushpanjali Farms, Bijwoson, New Delhi - 110061	Biodigester	DRDE
230.	G C Home Mades, #766, Near nirmithi Kendra, Bogdi, 2nd Stage, North, Mysore- 570026	Short Term Preserved Chapaties	DFRL
231.	Live Long Foods Pvt. Ltd, House No- 1-8-506/43-A, Prakasham Nagar Behind Hanuman Mandir, Begumpet, Hyderabad	Retort Pouch Processed Food	DFRL
232.	M/s Vinni Chemicals Pvt Ltd, Delhi 49, Rajpur Road Delhi-11054	Glycol based Antifreeze Coolants - DAFC 30 and DAFC 50	DMSRDE
233.	M/s KerawellNutrifoods, Kanad, Edayannur (P.O.) Kannur District, Kerala - 670595	Instant Coconut Chutney Mix	DFRL

S.No	ToT Recipient Industry	Technology Transferred	Developed by (Lab)
234.	M/s Hi-Tech Robotic Systemz, Ltd, Plot No A-18, Infocity-I, Sector- 33& 34 Gurgaon	ROV 'DAKSH'	R&DE(E)
235.	M/s Western India Cashew Company Pvt Ltd, Opposite Collector's Bungalow, Kochupilamoodu, Kollam-691001, Kerala	Ergogenic Bar, Flaxoat Tasty Bar & Omega-3-Rich Bar	DFRL
236.	M/s PravekKalpPvt Ltd, B-8, Sector-3 NOIDA , UP -201301	Seabuckthorn Herbal Tea	DIHAR
237.	M/s PravekKalpPvt Ltd, B-8, Sector-3 NOIDA , UP -201301	Herbal Adaptogenic Appetizer	DIHAR
238.	M/s PravekKalpPvt Ltd, B-8, Sector-3 NOIDA , UP -201301	Seabuckthorn Beverage	DIHAR
239.	M/s PravekKalpPvt Ltd, B-8, Sector-3 NOIDA , UP -201301	Seabuckthorn Soft Gel Capsule	DIHAR
240.	M/s NCR Akshaya International, 5 Rame Grounder Colony, Near CTC Depot, Kovai Road, Pollachi -642002 Tamil Nadu	Retort Pouch Processed Foods	DFRL
241.	M/s Shaan Foods, #10/A, 1st Floor, CV Road Cross, Bannimantap, Mysore -57015	Short Term Preserved Chapatis	DFRL
242.	M/s Maestros Electronics and Telecommunications Limited EL-66, TTC Industrial Area, Electronic Zone, MIDC, Mahape, navi Mumbai, Maharashtra	Rugged Portable Telemedicine System for Armed Forces	DEBEL
243.	M/s Amber PhytoextractsPvt Ltd, U-190, Street No.4 Shakarpur, New Delhi-11092	Seapricot Beverage	DIHAR
244.	M/s Amber PhytoextractsPvt Ltd, U-190, Street No.4 Shakarpur, New Delhi-11092	Seabuckthorn Jam	DIHAR
245.	M/s Amber PhytoextractsPvt Ltd, U-190, Street No.4 Shakarpur, New Delhi-11092	Seabuckthorn Beverage	DIHAR
246.	M/s Amber PhytoextractsPvt Ltd, U-190, Street No.4 Shakarpur, New Delhi-11092	Seabuckthorn Soft Gel Capsule	DIHAR
247.	M/s Amber PhytoextractsPvt Ltd, U-190, Street No.4 Shakarpur, New Delhi-11092	Seabuckthorn Herbal Tea	DIHAR
248.	Caparo Engineering Limited, 101-104, 1st Floor, Naurang House,21,Kasturba Gandhi Marg, New Delhi-110001	Bio-Digester	DRDE

APPENDIX-I

STANDING COMMITTEE ON DEFENCE (2015-16)

MINUTES OF THE NINTH SITTING OF THE STANDING COMMITTEE ON DEFENCE (2015-16)

The Committee sat on Monday, the 4 April, 2016 from 1100 hrs. to 1650 hrs. in Main Committee Room, Parliament House Annexe, New Delhi.

PRESENT

Maj Gen B C Khanduri, AVSM (Retd) - Chairperson

Lok Sabha

2. Shri Suresh C Angadi
3. Shri Thupstan Chhewang
4. Col Sonaram Choudhary(Retd)
5. Shri G Hari
6. Shri Ramesh Jigajinagi
7. Shri Tapas Paul
8. Shri Ch Malla Reddy
9. Smt Mala Rajya Lakshmi Shah
10 Shri A P Jithender Reddy
11. Smt Pratyusha Rajeshwari Singh

Rajya Sabha

12. Shri Rajeev Chandrasekhar
13. Shri A U Singh Deo
14. Shri Harivansh
15. Shri Vinay Katiyar
16. Shri Hishey Lachungpa
17. Shri Madhusudan Mistry
18. Smt Ambika Soni
19. Shri Tarun Vijay

SECRETARIAT

1.	Smt Kalpana Sharma	-	Joint Secretary
2.	Shri TG Chandrasekhar	-	Director
3.	Smt J.M. Sinha	-	Additional Director
4.	Shri Rahul Singh	-	Under Secretary

WITNESSES

REPRESENTATIVES OF THE MINISTRY OF DEFENCE

S.No.	Name	Designation
1.	Shri G Mohan Kumar	Defence Secretary
2.	Shri AK Gupta	Secy (DP)
3.	Shri Prabhu Dayal Meena	Secy (ESW)
4.	Dr S Christopher	Secy DR&D
5.	Lt Gen MMS Rai	VCOAS
6.	VAdm P Murugesan	VCNS
7.	Air Mshl BS Dhanoa	VCAS
8.	Air Mshl A S Bhonsle	CISC
9.	Shri SS Mohanty	FA(DS)
10.	Ms. Surina Rajan	Addl Secy (DP)
11.	Shri J R K Rao	Addl Secy(J)
12.	Smt Anuradha Mitra	FA (Acq)
13.	Lt Gen PK Srivastava	DGFP
14.	Lt Gen Sanjay Kumar Jha	DGPP
15.	Lt Gen Vishwambhar Singh	DGWE
16.	Lt Gen A K Ahuja	DCIDS
17.	Lt Gen R K Sharma	DG OL&SM
18.	Air Mshl RKS Bhadauria	DCAS
19.	Air Mshl Anil Khosla	DG Air (Ops)
20.	Lt Gen Subrata Saha	DCOAS (P&S)
21.	Shri GS Malik	CCR&D (R&M & Imp)
22.	Shri RG Vishwanathan	Addl FA & JS
23.	Shri J Janardhan	Spl DG QA
24.	Shri Ashok Dongre	JS(Trg) & CAO
25.	Shri Rajnish Kumar	FA & JS
26.	Shri A N Das	Addl. FA & JS
27.	Shri Ravi Kant	Addl. Secy, (R)
28.	Shri Sanjay Prasad	JS(LS)
29.	Shri AKK Meena	JS & AM (MS)
30.	Shri Subir Mallik	JS & AM (LS)
31.	Shri Jiwesh Nandan	JS (G)
32.	Shri Rajeev Verma	JS & AM (Air)
33.	Maj Gen Manoj Pande	ADG MO(B)
34.	Maj Gen BK Pande	ADG FP
35.	Maj Gen SS Hasabnis	TM (LS)
36.	Maj Gen SK Upadhya	ADG (Proc)
37.	Maj Gen J. S. Sandhu	ADG(B)
38.	Shri K Chandrasekhar	ADG (Adm)

39.	RAdm Dinesh K Tripathi	ACNS (P&P)
40.	AVM Sandeep Singh	ACAS (Plans)
41.	AVM SM Subhani	ACAS Fin P
42.	AVM BR Krishna	ACAS Proj
43.	AVM H J Walia	ADG(A)
44.	AVM M Baladitya	ACAS Procurement
45.	AVM OEM Menon	ACAS (Org &Cer)
46.	Dr JP Singh	Director, Parliamentary Affairs
47.	Shri Praveen Kumar	Dir (Acq)
48.	Shri S.K. Pandey	Dir(Fin)
49.	Ms Maulshri Pande	Director (Fin/Budget)
50.	Col Pratap Malik	Director A
51.	Brig C Bansi Ponnappa	Dy TM (LS)
52.	Brig Sanjay Puri	DDG PP (Plans)
53.	Brig Anil Puri	DDG FP(A)
54.	Brig C P Sangra	DDG(Lgs)
55.	Brig R R Sharma	DDG (Trg)
56.	Brig AK Chanma	DDG P&M Cell
57.	Air Cmdr DK Awasthi	PD AS
58.	Cmde P K Banerjee	DDG (P&C)
59.	Cmde Sanjay Vatsayan	PNDP

2. At the outset, the Chairperson welcomed the Members of the Committee and informed them of the agenda for the Sitting. The Committee then invited the representatives of the Ministry of Defence and the Defence Services. The Chairperson welcomed the representatives to the Sitting of the Committee and drew their attention to Direction 55(1) of Directions by the Speaker, Lok Sabha.

3. The Chairperson initiated the discussion and directed the Ministry of Defence to intimate the Committee about their scheduled programmes atleast 2 months in advance so that Committee's schedule of Sittings is not disturbed. Thereafter, the Chairperson requested the representatives of the Ministry of Defence to brief the Committee on various issues included in the agenda for the day.

4. The representatives of the Ministry commenced their briefing through a Power Point Presentation on General Defence Budget. This was followed by detailed deliberations on the following issues:

(i) Inadequate budgetary provision to Defence in this year's Budget Estimates.
(ii) Reasons for clubbing demands under various services,
(iii) Making Capital Budget as a roll on and non- lapsable,
(iv) Slow pace of decision making,
(v) Effect of underspending, and
(vi) Amount of Defence Pension allocated for arrear of OROP in the Budget for 2016-17.

5. Thereafter, a Power Point Presentation on Defence Procurement Policy was made. This was followed by extensive discussion on the following points:

(i) The newly-formulated Defence Procurement Procedure (DPP 2016).

(ii) Delayed timelines,

(iii) Indecisiveness and hierarchical hurdles,

(iv) Roadmap for `Make in India',

(v) Enhancing core critical capability of Defence under `Make in India'.

The Committee took break for lunch and resumed the Sitting at 2:30 P.M.

6. Afterwards, a Presentation was made on Army. The Presentation was found to be short of relevant information and therefore, the Committee decided to call for Presentation on Army on any other day.

7. Thereafter, Presentation on Air force was made, which was followed by discussion on the following points:

(i) Inadequate Budgetary Provisions,

(ii) Shortage of Squadrons,

(iii) Need to replace MiG 21 Aircraft,

(iv) Delay in Making of Intermediate Jet Trainer Craft (Kiran).

(v) Depleting Pilot to Cockpit Ratio,

(vi) Need to have a separate fund for Air force to attend to work related to unforeseen natural calamities,

(vii) Need for utilizing highways for landing of smaller Aircraft, and

(viii) Need for having a Air Force Station at Zanskar etc.

8. The Ministry gave a Presentation on Directorate General of Quality Assurance (DGQA), National Cadet Corps (NCC) and Sainik Schools in that order. This was followed by detailed discussions on the subjects and Members raised queries on the following issues:

(i) Expansion of NCC by raising more NCC units;

(ii) Having NCC units in all schools increase in number of Sainik Schools and similarity in their infrastructure; and

(iii) Opening Sainik Schools for girls, etc.

9. The representatives of the Ministry of Defence replied to various queries/observations of Members. The information not readily available was desired to be furnished later on. The Chairperson directed the representatives of the Ministry of Defence to furnish written replies to all the queries at the earliest.

A copy of verbatim record of the proceedings has been kept.

The Committee then adjourned.

APPENDIX II

STANDING COMMITTEE ON DEFENCE (2015-16)

MINUTES OF THE TENTH SITTING OF THE STANDING COMMITTEE ON DEFENCE (2015-16)

The Committee sat on Tuesday, the 5th April, 2016 from 1100 hrs. to 1700 hrs. in Main Committee Room, Parliament House Annexe, New Delhi.

PRESENT

Maj Gen B C Khanduri, AVSM (Retd) - Chairperson

Lok Sabha

2. Shri Suresh C Angadi
3. Shri Shrirang Appa Barne
4. Shri Dharambir
5. Shri Thupstan Chhewang
6. Col Sonaram Choudhary(Retd)
7. Shri H DDevegowda
8. Shri Sher Singh Ghubaya
9. Shri Ramesh Jigajinagi
10. Shri Vinod Khanna
11. Shri Tapas Paul
12. Shri Malla Reddy
13. Smt Mala Rajya Lakshmi Shah
14. Shri A P Jithender Reddy
15. Smt Pratyusha Rajeshwari Singh

Rajya Sabha

16. Shri Rajeev Chandrasekhar
17. Shri A U Singh Deo
18. Shri Harivansh
19. Shri Vinay Katiyar
20. Shri Hishey Lachungpa
21. Shri Madhusudan Mistry
22. Smt Ambika Soni
23. Shri Tarun Vijay

SECRETARIAT

1.	Smt Kalpana Sharma	-	Joint Secretary
2.	Shri TG Chandrasekhar	-	Director
3.	Smt JM Sinha	-	Additional Director
4.	Shri Rahul Singh	-	Under Secretary

WITNESSES

REPRESENTATIVES OF THE MINISTRY OF DEFENCE

Sl. No.	Name	Designation
1.	Shri G Mohan Kumar	Defence Secretary
2.	Shri SS Mohanty	FA(DS)
3.	Shri Ravi Kant	Addl. Secy. (R)
4.	Shri AN Das	Addl. FA & JS
5.	Shri Jiwesh Nandan	JS (G)
6.	Dr S Christopher	Secy(DR&D)
7.	Dr K Tamilmani	DG(Aero)
8.	Dr Satish Kumar	DG (MSS)
9.	Dr S C Sati	DG(NS & M)
10.	Ms J Manjula	DG(ECS)
12.	Dr KD Nayak	DG (MED &CoS)
11.	Dr Manas K Mandal	DG(LS)
12.	Dr CP Ramanarayanan	DG(ACE) & CC R&D(HR)
13.	Shri GS Malik	CCR&D (R&M & Imp)
14.	Dr Guru Prasad	CCR&D (PC & SI)
15.	Shri M Hafizur Rahaman	CCR&D (TM)
16.	Dr G Athithan	CCR&D (SAM)
17.	Shri Sudhir Mishra	CCR&D (BrahMos)
18.	Shri RG Vishwanathan	Addl FA & JS
19.	Lt Gen A K Ahuja	DCIDS (PP&FD)
20.	Maj Gen SK Upadhya	ADG (Proc)
21.	VAdm P Murugesan	VCNS
22.	RAdm Dinesh K Tripathi	ACNS (P&P)
23.	RAdm Kapil Mohan Dhir	ACDIS(WSOI)
24.	Cmde Sanjay Vatsayan	PDNP
25.	Cmde A K Sharma	DACIDS (Budget)
26.	Shri Rajendra Singh	DG ICG
27.	Shri V D Chafekar	DDG (P&P)
28.	Comdt MM Mark	JD (Plans)
29.	Air Mshl A S Bhonsle	CISC
30.	AVM SC Chafekar	ACIDS(FP)
31.	Shri J.R.K. Rao	Addl. Secy.(J)
32.	Shri Deepak Anurag	JS (C&W)
35.	Shri Ajay Kumar Sharma	Addl DG(Lands/IT)
36.	Shri PrachurGoel	Addl DG (C&Crd)
37.	Shri P Daniel	Addl DG(Adm)
38.	Shri G VijayaBhaskar	DDG (C&Crd)
39.	Shri Ajay Singh	CE CW&E

40.	Shri Ashwini Kumar	Addl FA & JS
41.	Shri Suresh Kumar	JS(BR)
42.	Lt Gen. MMS Rai	VCOAS
43.	Lt Gen Ranbir Singh	DGMO
44.	Lt Gen Sanjiv Talwar	E-in-C
45.	Lt Gen BS Sahrawat	DG LW&E
46.	Lt Gen Suresh Sharma	DGBR
47.	Lt Gen RV Kanitkar	QMG
48.	Maj Gen Michael Mathew	ADG LW&E
49.	Maj Gen Ajay Anand	DG Works
50.	Maj Gen SPS Kohli	ADGW(Army)
51.	Maj Gen Manoj Pande	ADG MO(B)
52.	Maj Gen Gurdip Singh	DG MAP
53.	Brig SK Vidyathi	DDG MO (C)
54.	Brig K K Repswal	DDGW (PPC &Est)
58.	Brig RK Sharma	DDG (TP)
59.	Brig Sanjay Gupta	DDG CS
60.	V Adm P Murugesan	VCNS
61.	Air Mshl BS Dhanoa	VCAS
62.	Air Mshl BBP Sinha	AOA
63.	Cmde Ravi Malhotra	PDW

2. At the outset, the Chairperson welcomed the Members of the Committee and informed them about the agenda for the Sitting. The Committee then invited representatives of the Ministry of Defence, Navy and other organizations. The Chairperson welcomed the representatives to the Sitting of the Committee and drew their attention to Direction 55(1) of Directions by the Speaker, Lok Sabha.

3. The Chairperson initiated the discussion and requested the representatives of the Ministry of Defence to brief the Committee on various issues included in the agenda for the day.

4. The representatives of the Ministry commenced their briefing through a Power Point presentation on Defence Research and Development. This was followed by detailed deliberations on following issues:

(i) Gap between allotted funds and expenditure,

(ii) Contractual appointment of scientists,

(iii) 'Make in India' initiative,

(iv) Export of DRDO developed equipments,

(v) Mechanism to address user grievance and feedback,

(vi) Involvement of private sector etc.

5. Thereafter, a presentation was given on Navy and Joint Staff which was followed by discussion on following points:

(i) Depleting fleet strength of Navy,

(ii) Inadequacies in capital budget,

(iii) Shortage of manpower,

(iv) Delayed procurement process,

(v) Replacement of ageing equipment,

(vi) Operational preparedness etc.

The representatives of the Ministry of Defence submitted their replies to queries/observations of members.

6. Thereafter, a presentation on Coast Guard Organization was given before the Committee. Subsequent queries from Members included wide gap in projection of funds and allocation and coordination of Indian Coast Guard with Navy.

7. The Committee took break for lunch and resumed the Sitting at 1440 hrs.

8. A presentation was made on Directorate General Defence Estate (DGDE) and pursued with deliberations on the subject. Members posed various queries on the following points:

(i) Blocking of roads used by ordinary citizens by DGDE,

(ii) Encroachment of Defence Lands by civilians,

(iii) Digitisation of records in DGDE,

(iv) Financial problems of cantonment boards,

(v) Recoveries of dues from Army and Navy etc.

9. The Ministry gave presentation on Military Engineer Services and Married Accommodation Project in that order. This was followed by detailed discussions on the subjects and Members asked questions on the following issues:

(i) Delay in completion of projects,

(ii) Adoption of state-of-the-art technology etc.

10. Thereafter, a presentation was given on Border Roads Organization (BRO) which was followed by discussion on the following points:

(i) Status of Border connectivity,

(ii) Financial crunch faced by BRO,

(iii) Non-availability of adequate number of quarries,

(iv) Obsolescence of equipment, shortage of manpower,

(v) Modernisation plan etc.

The representatives of the Ministry of Defence submitted their replies to queries/observations of Members.

11. The Chairperson directed the representatives of the Ministry of Defence to furnish written replies to all the queries at the earliest.

A copy of verbatim record of the proceedings has been kept.

The Committee then adjourned.

APPENDIX-III

STANDING COMMITTEE ON DEFENCE (2015-16)

MINUTES OF THE ELEVENTH SITTING OF THE STANDING COMMITTEE ON DEFENCE (2015-16)

The Committee sat on Wednesday, the 06 April, 2016 from 1030 hrs. to 1450 hrs. in Main Committee Room, Parliament House Annexe, New Delhi.

PRESENT

Maj Gen B C Khanduri, AVSM (Retd) - Chairperson

Lok Sabha

2. Shri Shrirang Appa Barne
3. Shri Dharambir
4. Shri Thupstan Chhewang
5. Col Sonaram Choudhary(Retd)
6. Shri H D Devegowda
7. Shri Sher Singh Ghubaya
8. Shri Vinod Khanna
9. Shri Tapas Paul
10. Shri Ch. Malla Reddy
11. Shri Rajeev Satav
12. Shri A.P. Jithender Reddy
13. Smt. Pratyusha Rajeshwari Singh

Rajya Sabha

14. Shri Rajeev Chandrasekhar
15. Shri Harivansh
16. Shri Vinay Katiyar
17. Shri Madhusudan Mistry
18. Smt. Ambika Soni

SECRETARIAT

1. Smt Kalpana Sharma - Joint Secretary
2. Shri T G Chandrasekhar - Director
3. Smt J M Sinha - Additional Director
4. Shri Rahul Singh - Under Secretary

WITNESSES

REPRESENTATIVES OF THE MINISTRY OF DEFENCE

Sl. No.	Name & Designation	Designation
1.	Shri G Mohan Kumar	Defence Secretary
2.	Shri SS Mohanty	FA(DS)
3.	Shri Ravi Kant	Addl. Secy. (R)
4.	Shri Subir Mallik	JS & AM (LS)
5.	Shri Jiwesh Nandan	JS (G)
6.	Lt Gen. MMS Rai	VCOAS
7.	Lt Gen Subrata Saha	DCOAS (P&S)
8.	Lt Gen PK Srivastava	DGFP
9.	Lt Gen Sanjay Kumar Jha	DGPP
10.	Lt Gen Vishwambhar Singh	DGWE
11.	Lt Gen RK Sharma	DG OL & SM
12.	Maj Gen BK Pande	ADG FP
13.	Maj Gen SK Upadhya	ADG (Proc)
14.	Maj Gen Manoj Pande	ADG MO(B)
15.	Brig. AK Channan	DDG P&M Cell
16.	Brig Sanjay Puri	DDG PP (Plans)
17.	Brig Anil Puri	DDG FP(A)
18.	Brig Rohit Gupta	DDGWE-1
19.	Shri AK Gupta	Secy (DP)
20.	Ms. Surina Rajan	Addl. Secy. (DP)
21.	Shri AK Prabhakar	DGOF & Chairman/OFB
22.	Shri Bharat Khera	JS(NS)
23.	Shri RJ Bhattacharya	DDG/Budget
24.	Shri Sanjay Garg	JS(DIP)
25.	Smt Kusum Singh	JS (P&C)
26.	Shri KK Pant	JS(Aero)
27.	Shri Sanjay Prasad	JS(LS)
28.	Shri DK Mahapatra	Secy/OFB
29.	Shri V Udaya Bhaskar	CMD(BDL)
30.	Shri T Suvarna Raju	CMD(HAL)
31.	Shri S K Sharma	CMD(BEL)
32.	Maj Gen SK Upadhya	ADG (Proc)
33.	RAdm (Retd) L V Sarat Babu	CMD(Hindustan Shipyard Ltd)
34.	Shri P Dwarakanath	CMD(BEML)
35.	RAdm (Retd) Shekhar Mital	CMD (Goa Shipyard Ltd)
36.	RAdm (Retd) AK Verma	CMD(GRSE)
37.	Dr DK Likhi	CMD(MIDHANI)
38.	RAdm (Retd) RK Shrawat	CMD(MDL)
39.	Shri M Mazhar Ali	GM (Planning)
40.	Dr CP Ramanarayanan	DG(ACE) & CC R&D(HR)
41.	Dr Guru Prasad	CCR&D (PC&PI)
42.	Shri J Janardhan	DGQA
43.	R Adm AK Saxena	DGND(SSG)
44.	R Adm OPS Rana	DGNAI
45.	Shri S Chatterjeem	DGONA
46.	AVM BR Krishna	ACS(Project)
47.	AVM Sandeep Singh	ACAS(Plans)
48.	AVM SJ Nanodkar	ACAS(Ops)
49.	Shri AN Das	Addl. FA
50.	Shri Prabhu Dayal Meena	Secy, (ESW)
51.	Shri Sudhansu Mohanty	FA DS
52.	Lt Gen Rakesh Sharma	AG
53.	Lt Gen Ashwani Kumar	DG(DC&W)

54.	Smt K Damayanthi	JS(ESW)
55.	Ms. Devika Raghuvanshi	Addl FA & JS
56.	Ms. Santosh	JS (Res-II)
57.	Shri RozyAgarwal,	Joint CGDA
58.	Maj Gen AP Bam	MD ECHS
59.	Maj Gen Jagatbir Singh	DGR
60.	Maj Gen Rakhi Singh	Addl DG, AGMS
61.	Brig Harinder Singh	DDG DIAV
62.	Brig HS Kahlon	DDG DIAV(Designate)
63.	Brig Sadhan Sawhnay	Dy DGAFMS (Plg)
64.	Cmde Rohtas Singh	Secy, KSB
65.	Col SS Pundir	SO to AG

2. At the outset, the Chairperson welcomed the Members of the Committee and informed them about the agenda for the Sitting. The Committee then invited representatives of the Ministry of Defence and Defence Public Sector Undertakings. The Chairperson welcomed the representatives to the Sitting of the Committee and drew their attention to Direction 55(1) of Directions by the Speaker, Lok Sabha.

3. The Chairperson initiated the discussion and requested the representatives of the Ministry of Defence to brief the Committee on various issues included in the agenda for the day.

4. The representatives of the Ministry of Defence commenced their briefing through a PowerPoint presentation on the status of availability of ammunition. This was followed by detailed deliberations on the state of ammunition and related issues which included the following:

(i) inadequacy of ammunition,

(ii) inability of Ordnance Factory Board to fulfill the targets given to them,

(iii) alternate source of production,

(iv) private sector participation in defence production and

(v) import of ammunition etc.

5. Thereafter, a PowerPoint presentation on Defence Public Sector Undertaking was made. This was followed by extensive discussion on the subject which included the following:

(i) capacity ,efficiency and innovation of/by PSUs,

(ii) non-realization of targets and

(i) non-availability of funds etc.

6. Thereafter, a PowerPoint presentation on Indian Ordnance Factories was made. This was followed by detailed discussion on the subject which included the following:

(i) self reliance in production,

(ii) salient features of Ordnance Factory Board Budget and

(iii) modernization of OFs etc.

7. The Committee took break for lunch and resumed the Sitting at 1335 hrs.

8. Thereafter, a presentation was made on Ex-Servicemen Welfare and Ex-Servicemen Contributory Health Scheme and pursued with deliberations on the subject which included issues such as the following:

(i) constraints faced by the Department of Ex-Servicemen Welfare in the welfare activities, resettlement and rehabilitation of Ex-Servicemen, war-widows and their dependents,

(ii) non-availability of suitable jobs as per qualifications in case of appointment on compassionate ground,

(iii) OROP-problems and grey areas,

(iv) financial assistance to Ex-Servicemen,

(v) status of Second World War pensioners and widows and

(v) empanelment of hospitals, non-payment of bills, inadequacy of funds for 2016-17 etc.

9. The Chairperson directed the representatives of the Ministry of Defence, Defence Public Sector Undertakings, Ex-Servicemen Welfare, Ex-Servicemen Contributory Health Scheme to furnish written replies to all the queries in a week's time.

A copy of verbatim record of the proceedings has been kept.

The Committee then adjourned.

APPENDIX-IV

STANDING COMMITTEE ON DEFENCE

MINUTES OF THE TWELFTH SITTING OF THE STANDING COMMITTEE ON DEFENCE (2015-16)

The Committee sat on Friday , the 29 April, 2016 from 1000 hrs. to 1030 hrs. in Committee Room`62', Parliament House, New Delhi.

PRESENT

Maj Gen B C Khanduri, AVSM (Retd) - Chairperson

Lok Sabha

2	Shri Suresh C Angadi
3	Shri Shrirang Appa Barne
4	Shri Dharambir
5	Col Sonaram Choudhary(Retd)
6	Shri Sher Singh Ghubaya
7	Shri Ramesh Jigajinagi
8	Km Shobha Karandlaje
9	Dr Mriganka Mahato
10	Shri Ch Malla Reddy
11	Smt Mala Rajya Lakshmi Shah
12	Shri A P Jithender Reddy

Rajya Sabha

13	Shri A U Singh Deo
14	Shri Harivansh
15	Shri Hishey Lachungpa
16	Shri Tarun Vijay

SECRETARIAT

7.	Smt. Kalpana Sharma	-	Joint Secretary
8.	Shri T.G. Chandrasekhar	-	Director
9.	Smt. Jyochanmayi Sinha	-	Additional Director
10.	Shri Rahul Singh	-	Under Secretary

2. At the outset, the Chairperson welcomed the Members of the Committee and informed them about the agenda for the sitting. The Committee then took up for consideration the following draft Reports:-

(i) Report on Action Taken by the Government on the recommendations/observations contained in the seventh report (16th Lok Sabha) on Demands for Grants (2015-16) of the Ministry of Defence on Army (Demand No. 23).

(ii) Demands for Grants of the Ministry of Defence (2016-17) on General Defence Budget, Civil Expenditure of Ministry of Defence (Demand No. 20) and Defence Pension(Demand No. 21).

(iii) Demands for Grants of the Ministry of Defence (2016-17) on Army, Navy and Air Force (Demand No. 22).

(iv) Demands for Grants of the Ministry of Defence (2016-17) on Ministry of Defence (Miscellaneous) (Demand No. 20).

(v) Demands for Grants of the Ministry of Defence (2016-17) on Capital Outlay on Defence Services, Procurement Policy and Defence Planning (Demand No. 23).

3. After deliberations the Committee adopted the above reports with slight modifications in respect of recommendations.

4. The Committee, then, authorized the Chairperson to finalise the above draft Reports and present the same to the House on a date convenient to him.

The Committee then adjourned.

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